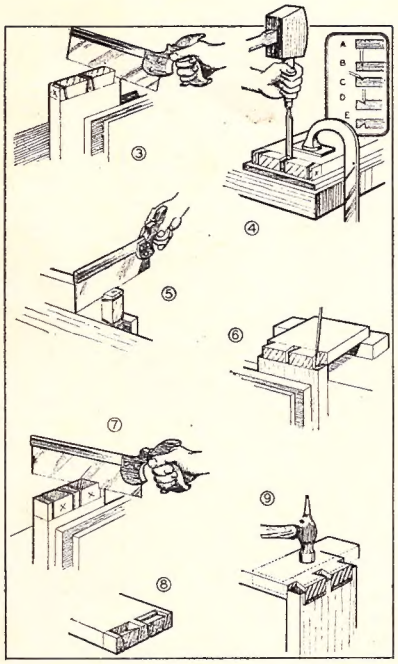
WOODWORKER

VOL. LX. No. 746 JANUARY 1956 ONE SHILLING



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Articles this month

GRAMOPHONE RECORD CABINETS
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ELECTRIC PENDANT : Q.B. REPLIES
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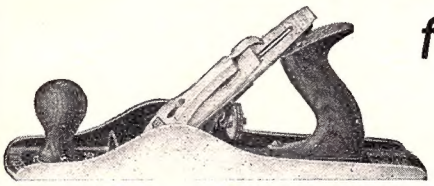

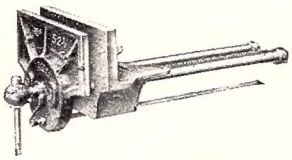

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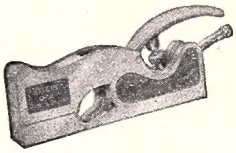

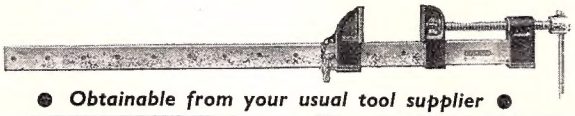

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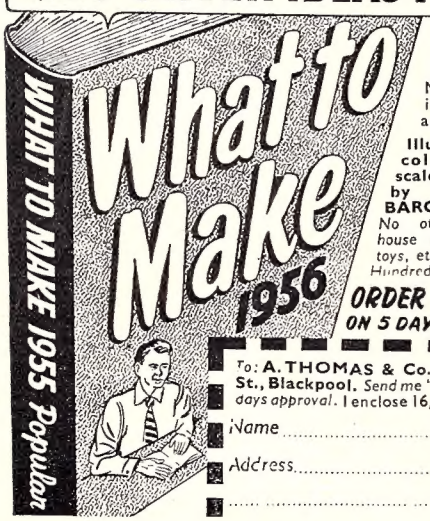

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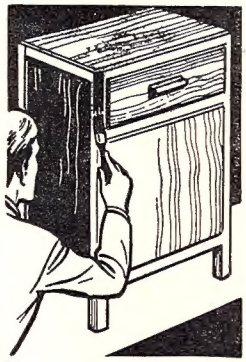

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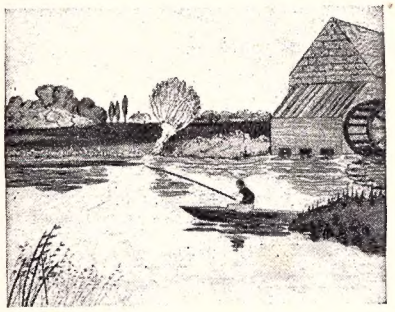

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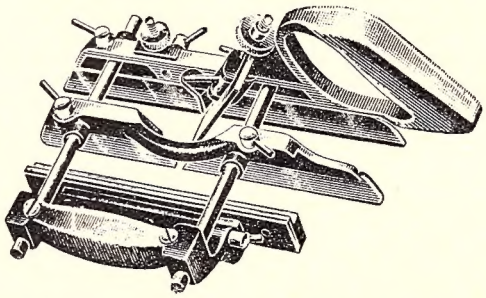

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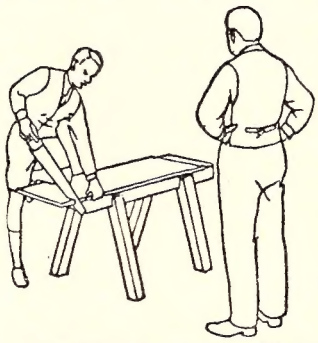

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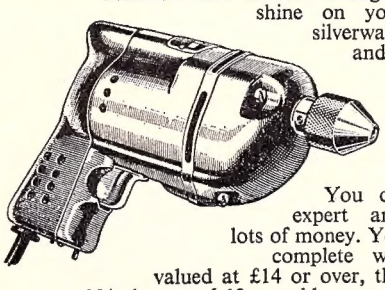
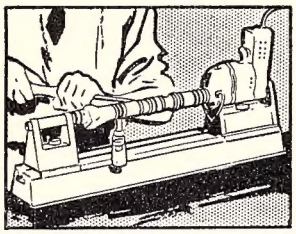
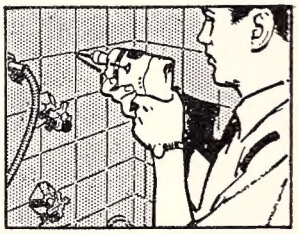
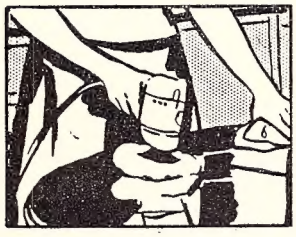
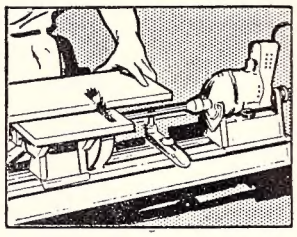






Professional wood turning and decorative furniture making is easy—even for the beginner—with the B & D lathe attachment. With the drill chuck and bit attached, you can put up shelves, fittings, in no time. The drill bores easily through wood, tile, brick—even steel.





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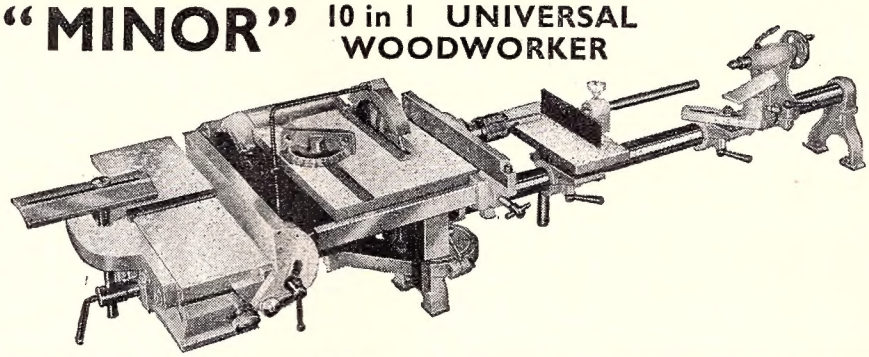

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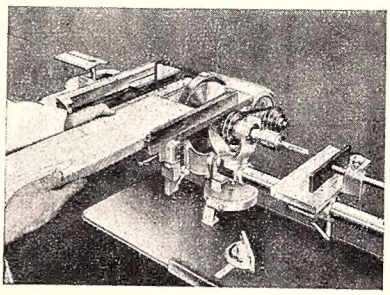
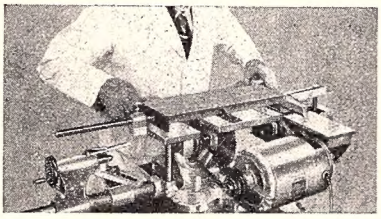
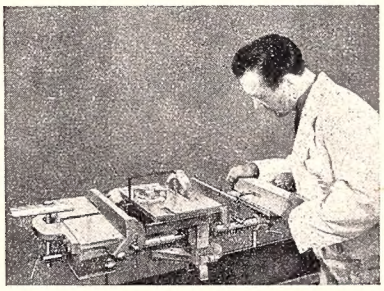


TILTING SAW TABLE—7″ dia. Circular Saw giving 2⅜″ cut. Mortiser & Planer ready for use.



THE COMBINATION TABLE—being used for Panel Cutting. Very useful for repetition work.



THE COMBINATION TABLE—Working in conjunction with Slot Mortising Chuck. Mortises from ¼″ to ⅝″.

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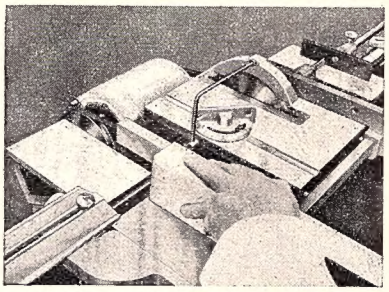

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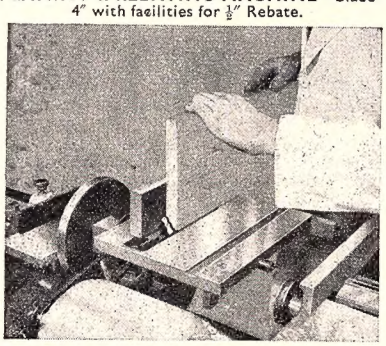
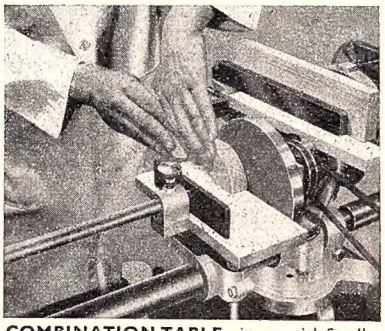


SPINDLE MOULDER—The cutter block taking the place of the Circular Saw. A wide selection of cutters available.



COMBINATION TABLE—in use with Sanding Disc. This table has many uses.

Basically a lathe, this machine is capable of turning out HIGH QUALITY work. It is designed with a tilting saw table and is equipped with facilities for planing, spindle moulding, wobble sawing, grinding, slot mortising and many other operations. A single high speed electric motor operates all attachments which may be mounted on the lathe in batteries of three, any one of which may be operated without dismantling or removing the others. FOUNDED on years of experience, this machine with a swivelling headstock is unquestionably the finest in its class. Eminently suitable for Schools and craftsmen, amateurs and professionals. It is NOT merely a utility tool LIMITED in performance but is designed to produce work of a useful character at reasonable cost.

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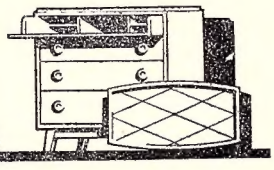
WOODWORKER

JANUARY, 1956



A CHOICE OF THREE DESIGNS

RECORD STORAGE CABINETS

SLIDING doors can be ¼ in. thick plate glass or 6 mm. thick good-quality plywood veneered with equal thickness on both sides. Plywood partitions can be inserted as shown in Fig. 1, or plastic record racks may be fitted. Each holds 50 records and stands quite loose within the cabinet. (A) and (C) designs will each take four of these racks, i.e. 200 records. (B) design will take six racks with a capacity of 300 records.

These are for the enthusiast who cherishes his collection. All are attractive and could be used for other purposes than the storage of records. There is scope for the use of decorative veneers such as walnut, eucalyptus, maple, etc. Solid mahogany or oak with a natural waxed finish might be considered. Comparatively inexpensive woods such as obeche and abura could be used in the carcase with hardwood legs and framing in beech or birch.

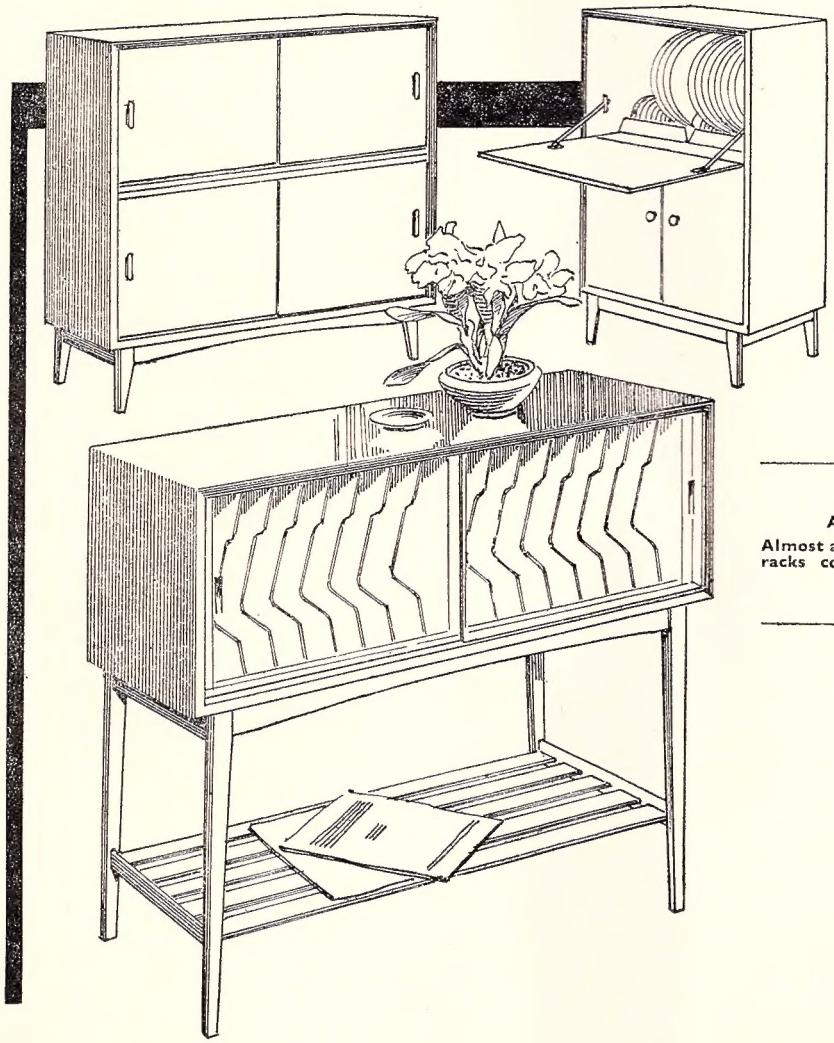


FIG. 1. DESIGNS WITH VARYING ACCOMMODATION FOR RECORDS

Almost any good quality hardwood could be used. The racks could be in plywood housed in, or special plastic racks could be used

Accommodation would be less with plywood divisions and the records in cardboard containers or in albums. Construction is standardized in all designs, the method employed in making the carcases largely depending upon the material used.

DESIGN A

The carcase top (C), ends (D), and bottom (E) can be in solid wood or in blockboard, plywood, or chipboard, the top and ends being veneered on both sides. The awkward joint for those not very skilled is that of top to ends. The strongest joints are the secret mitre dovetailed or the secret lap-dovetailed joints shown in Fig. 3. These are only possible with solid wood. Blockboard and plywood would have to be mitred and tongued, Fig. 3. The carcase bottom (E) could be lap-dovetailed if in solid wood or glued and screwed to rebated ends if blockboard or chipboard is used. An article on how to make the above joints appeared in the May, 1954, WOODWORKER.

Partition and door grooves.—If plywood partitions are being put

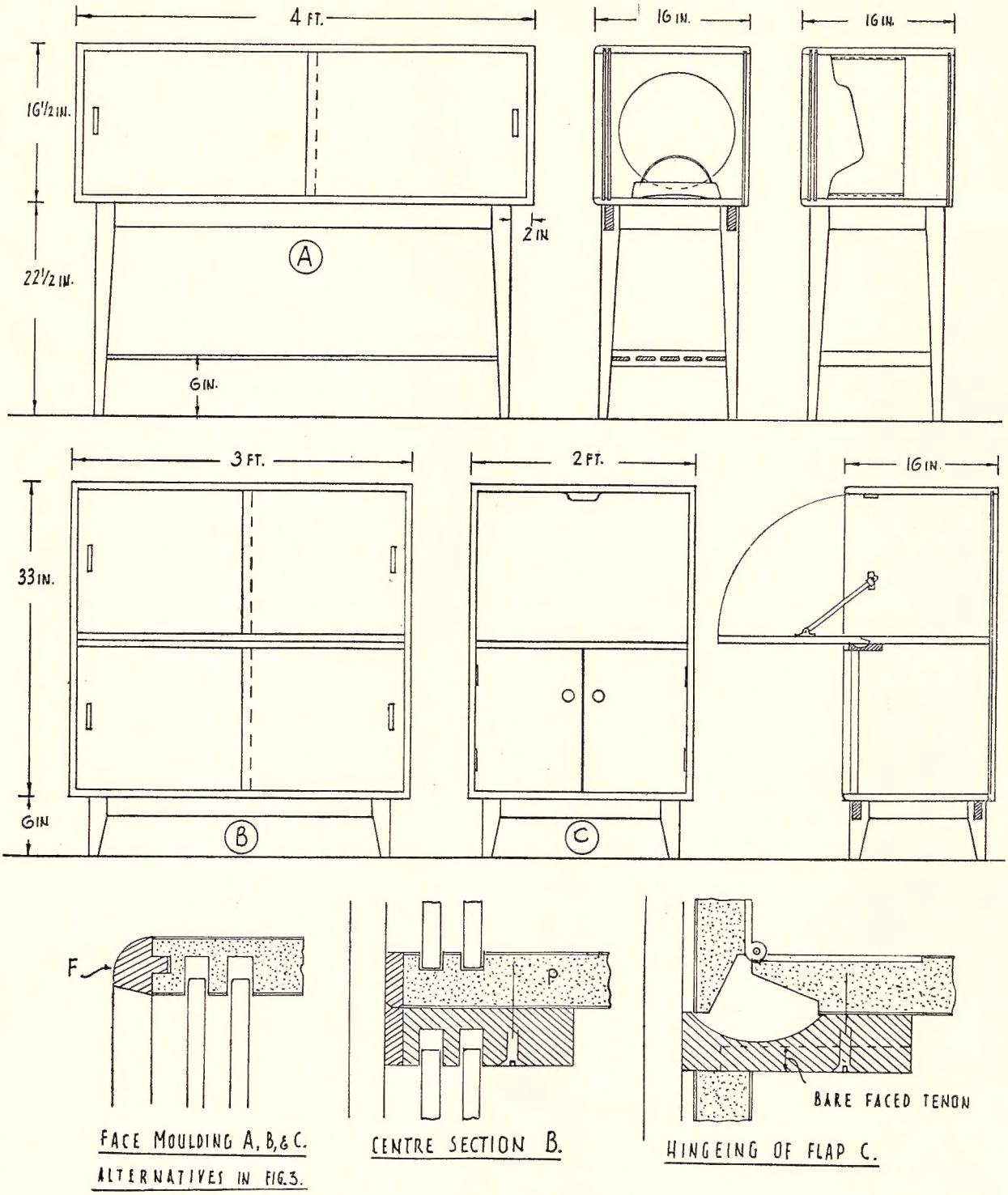


FIG. 2. ELEVATIONS OF THE THREE DESIGNS WITH MAIN SIZES AND ENLARGED SECTIONS

in directly, trenches for these should be cut across top and bottom stopping at the front, clear of the grooves for the doors. Procedure is to assemble the carcase dry and true up the front and rear. Knock down and groove top and bottom for the sliding doors commencing about ½ in. from the front edges. This will clear the grooves to be made for the face mouldings (F), see section, Fig. 2. Top grooves are ½ in. deep, bottom grooves ¼ in. deep.

They should be wide enough to allow the doors to be inserted and to slide freely.

Top cover to the sliding doors is $\frac{3}{16}$ in. full which enables them to be lifted in and out.

The front edges of top, ends, and bottom are now grooved $\frac{1}{4}$ in. deep for the tongued face mouldings three alternative sections of which are shown in Fig. 3. These mouldings can be glued and pinned straight on if desired although it is not so satisfactory as the method shown. Pins should be punched in and the holes filled. These should not be so long as to penetrate into the sliding door grooves at the top.

Finally groove or rebate the top and ends to receive the carcase back (M). Where divisions are run into grooves in the top and bottom the back should be screwed into rebates.

Assembling. — The carcase work is now ready to assemble and when gluing up test for squareness. This is important when glass sliding doors are fitted. The dead space at centre can be filled in by running in vertical edge divisions about 2 in. apart at centre and the gap filled between with (H) on list. See sketch of cabinet, design (A) in Fig. 1.

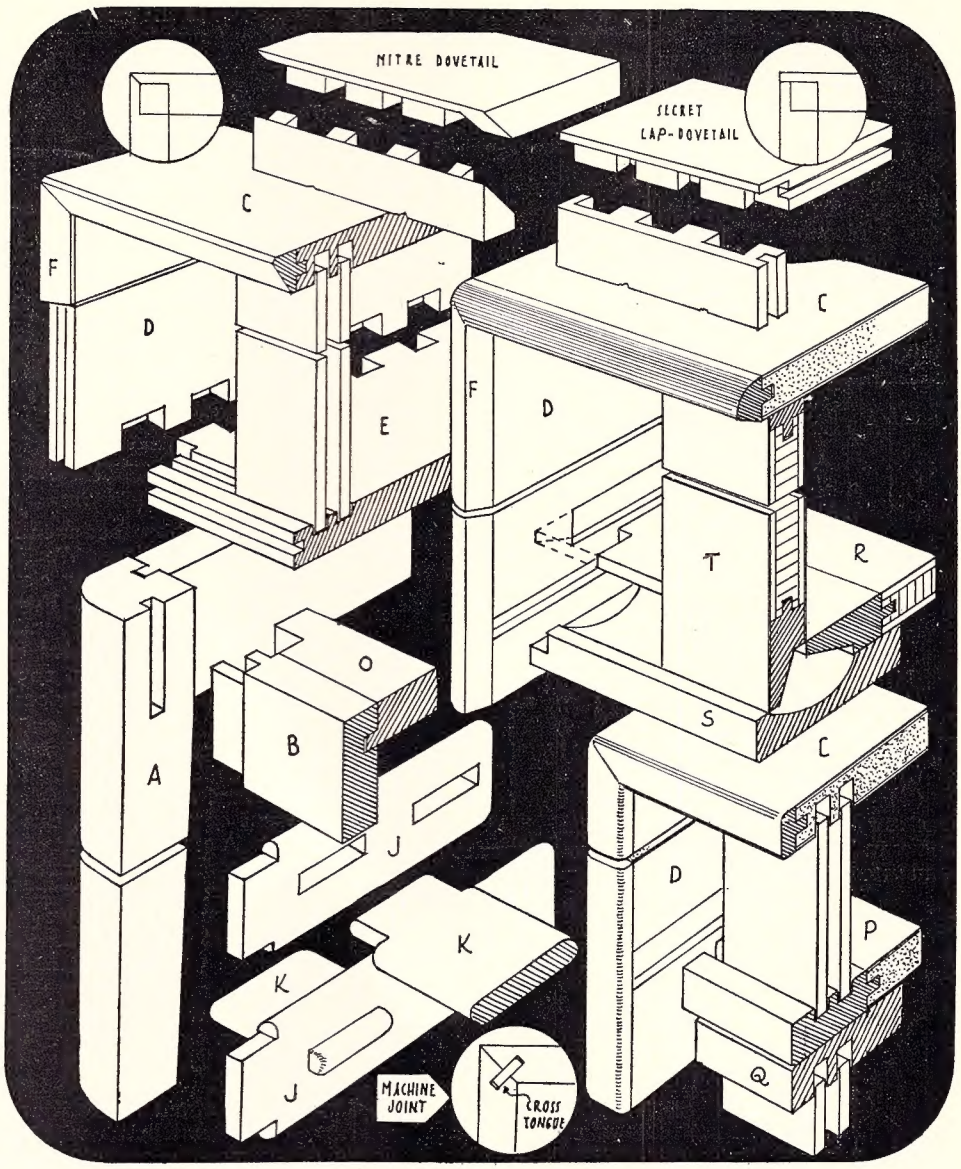


FIG. 3. CUT-AWAY VIEW SHOWING JOINTS AND SECTIONS

Alternatively, separate cases can be through-dovetailed together with partitions suitably spaced run into grooves across top and bottom. These cases should fit into the carcase freely, and need not be carried the full depth, see end section, Fig. 2. Screw into place after fitting the doors, and before fixing the back.

When ordering the $\frac{1}{4}$ in. thick plate glass sliding doors it is advisable to make plywood templates, running them in, to ensure a correct and easy fit. Specify the ground-out finger slots in pair at opposite sides. The centre lap should be about 1 in. and each door stopped when open about $1\frac{1}{4}$ in. from the end by filling in the groove.

Stand.—The legs (A) are prepared and mortised for the frame rails which should be stoutly tenoned as the stool has to carry considerable weight. When mortising for the end stretcher rails (J) allow for the inside taper to the legs. The outside corners of all legs are nicely rounded, Fig. 3. The slats (K) of the magazine rack are through-tenoned for strength, the ends being proud and rounded as shown in Fig. 3. Alternatively, stub tenons give an appearance as shown in Fig. 1. The carcase is fixed by screwing up through the stool framing, and, to avoid screws entering the sliding door grooves, add a block (O) to the front rail (B), Fig. 3, and screw through the block.

DESIGN B

Main carcase construction as for design (A). The position of the mid board or shelf (P) can be adjusted to suit. A little extra height may be required in the lower section for 15 in. records in plastic holders, enough being left above for 12 in. and 10 in. records. The mid board (P) may be slip-dovetailed or housed to the carcase ends $\frac{1}{4}$ in. deep. If in plywood or chipboard it should be clamped (P), Fig. 3, or lipped (P), Fig. 2.

The lining piece (Q) is butted to the ends and screwed up to the midboard both of which are grooved for the

doors to correspond with those in top and bottom. Bevel off the meeting edges very slightly to form a Vd joint. Procedure is as for design (A). The low stool is mortised and tenoned together and the height increased somewhat if preferred.

DESIGN C

Main carcase as previously described for (A) and (B) designs. The midboard (R) and flap (T) are in chipboard, blockboard, or multiply clamped at the hinged joint as shown in Fig. 3. The top and side edges of the fall require lipping or clamping. A good quality hard core chipboard may not require this, section, Fig. 2. It is advisable to work the joint and hinge together with a pair of odd sided hinges cut in before fitting the midboard to the carcase, as the joint can then be tested with ease.

The midboard should be housed in ¼ in. deep and the hollowed rail (S) beneath base-faced tenoned to the ends and screwed up to the board as shown in Fig. 3. The lower pair of doors are hinged with 2 in. brass butt hinges and fitted with ball catches engaging the rail or the carcase bottom. The stool is similar to design (B), but the legs should have less set-under; about 1 in. at the ends.

Avoid the use of blockboard or plywood for the carcases unless the use of machinery is available for the mitred and tongued corner joint which is the only one possible to give satisfaction. Reference should be made to the article on this joint in the May WOODWORKER, 1954.

Should the use of plastic racks be contemplated it is advisable to obtain these before commencing work. Sizes may vary.

CUTTING LISTS OF RECORD CABINETS

DESIGN A		Long ft.	Long in.	Wide in.	Thick in.
(A)	4 Legs	1	11	2	2
(B)	2 Stool rails	3	8	2½	⅞
	2 Ditto	1	2	2½	⅞
(C)	1 Top	4	0½	15¾	¾
(D)	2 Ends	1	5	15¾	¾
(E)	1 Bottom	4	0	15¼	¾
(F)	2 Facings	4	0½	1	¾
	2 Ditto	1	5	1	¾
(H)	1 Ditto	1	3½	2½	¾
(J)	2 Stretchers	1	2	2	½
(K)	5 Slats	3	8	2	½
(M)	1 Back	3	11½	16¼	¼
(N)	16 Divisions	1	4	13	¼
(O)	1 Stool block	3	6½	2	¾

Cut glass doors to fit cabinet. They should have $\frac{3}{16}$ in. cover in top ½ in. grooves. This allows them to be raised and lifted out or in.

DESIGN B		Long ft.	Long in.	Wide in.	Thick in.
	4 Legs		6½	2	2
	2 Rails	2	8	2½	⅞
	2 Ditto	1	2	2½	⅞
	1 Top	3	0½	15¾	¾
	2 Ends	2	9½	15¾	¾
	1 Bottom	3	0	15¼	¾
	2 Facings	3	0½	1	¾
	2 Ditto	2	9½	1	¾
(P)	1 Midboard	2	11½	15¼	¾
(Q)	1 Lining	2	11	2¾	¾
	1 Back	2	11½	32¾	¼

Cut doors to fit cabinet, allowing $\frac{3}{16}$ in. cover at the ½ in. grooves at the top.

DESIGN C		Long ft.	Long in.	Wide in.	Thick in.
	4 Legs		6½	2	2
	2 Rails	1	8	2½	⅞
	2 Ditto	1	2	2½	⅞
	1 Top	2	0½	15¾	¾
	2 Ends	2	9½	15¾	¾
	1 Bottom	2	0	15¼	¾
	2 Facings	2	9½	1	¾
	2 Ditto	2	0½	1	¾
(R)	1 Midboard	1	11½	14¾	¾
(S)	1 Rail	2	0	2¾	¾
(T)	1 Flap	1	11	16	¾
(U)	2 Doors	1	3½	11¾	¾
	1 Back	2	9	23¼	¼

Trimming allowance has been made in lengths and widths. Thicknesses are net. (106)

IN THE POLISHING SHOP

(*Continued from page* 8)

across the rubber face as in Fig. 2. The other hand does practically nothing. We keep it clean for handling, removing and inserting cigarettes, and presenting the customer with his bill. French polishing could, in fact, be described as a one-handed job. It was one of the trades taught to disabled ex-servicemen who had lost an arm. Some of them now make a better living with one hand than they previously did with two.

Practise this dip, oil, and squeeze, method until you can do it perfectly, keeping the rubber shape with the face unwrinkled. You will find that it keeps the rubber face clean, soft, and pliable. It is easy to regulate the amount of polish in it, this depending on the stage we are at. A certain amount of polish will get on the fingers but this should not extend beyond the mid-knuckles. No one in our shop worries unduly about lily-white hands in any case. If we did we should have chosen a more genteel occupation.

Purpose of the Oil.—Now from attempts we have made before at teaching this craft we have formed the opinion that this oil business is one that gives learners quite unnecessary worry. They seem to develop an oil complex. They talk of it as an enemy, a bogey, a key, or a secret—anything in fact but what it is—plain oil. They are afraid to use it or they do not use enough.

You cannot polish without oil and enough of it any more than you could use ice skates on reinforced concrete. The oil is a lubricant. It keeps the rubber from adhering to the soft shellac film. It reduces the friction so that pressure can be applied and maintained without undue effort. Oil will soak readily into wood so we do not use it until the surface is sealed. Thereafter it is essential to use enough oil, this amount being the thinnest possible film over the whole surface in hand. Use more oil than this minimum and you can still polish successfully; use too little and failure is inevitable. The feel of the rubber gives the required information. When it tends to stick, glide off and oil up immediately. You will soon get to the stage where oil will not give you a second thought, either putting it on or taking it off which latter we shall deal with another time.

Do's and Dont's :

Do work always in clean warm conditions.
Do arrange to have adequate lighting.
Do use enough oil but no more than is necessary.
Don't put the lubricating oil on to a bare surface.
Don't use the wrong kind of oil such as machine oil as this is likely to crack the film. (71)

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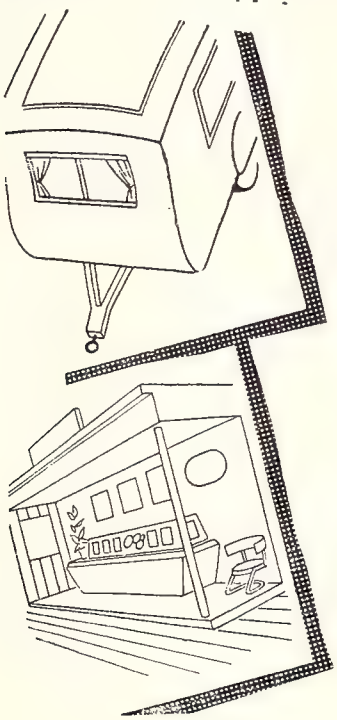

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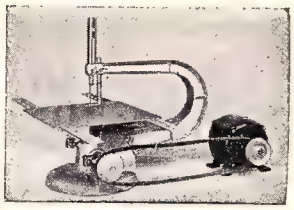

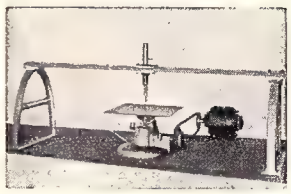

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PATHS AND PATTERNS

"—a man's power to improvise and adapt himself to every kind of condition depends upon his ability to use his hands skilfully and effectually"

NO Polar expedition has ever set out with more complete, scientifically planned equipment than that taken by the Trans-Antarctic Expedition which left England recently. It is true, of course, that every expedition, with the experience of its forerunners as a guide, goes out more elaborately equipped than the last to face every conceivable risk: how anxiously the experiences of previous expeditions are studied even on the spot was shown in Captain Scott's famous diary which told how books in the "Polar" library of his expedition were frequently consulted during their stay in winter quarters. It is interesting to note the high level of skill in handicrafts which was displayed by the various members of the party, and not only in their own particular technical or scientific field. Scott notes that Herbert Ponting, the photographer of the expedition, who had frequently had to fend for himself during his travels under primitive conditions, was a handyman with every form of tool, and had fitted out his dark-room in the hut in a truly workmanlike way; and again he notes the carpentry of a really high order with which the biologist and the motor engineer had fitted out the cubicle they shared, even to the careful finishing and staining of their bunks. That was forty-five years ago and despite the scientific developments of the intervening period which this time have produced an even wider and more complete range of equipment, it is interesting to note that provision has been made for the members of the expedition to pursue their own personal handicrafts and hobbies in their leisure hours. And not, one may conjecture, merely because such is the most absorbing way of passing time.

* * * *

The fact is that a man's power to improvise and adapt himself to every kind of condition depends upon his ability to use his hands skilfully and effectually. The best of machinery will break down, especially when faced with the phenomenal hazards of the Antarctic, which have, moreover, a truly uncanny way of upsetting the best-laid plans. At such times a man's very life may depend upon being able to make and repair with whatever tools and materials he has available. Skis and sledges and snow boots and sleeping-bags, tents and huts, are all vulnerable quite apart from motorised equipment which needs the technician, and, when one realises that a two-year stay in the Antarctic is anticipated, there is not a man's skill in any direction which may not be highly tested before the finish. That, we know, is the magnet which draws them. They are eager for the test, to prove their manhood in the face of Nature at its fiercest, knowing that with whatever resources they are equipped the final resource will lie in themselves. It is then that leisure hours spent over jobs of carpentry or the most exacting kind of skill that a woodwork enthusiast may acquire, pay high dividends. Once a man has got the feel of tools and the skill of them, he has got the right kind of foundation to tackle any "handyman" job in an emergency and it gives him a confidence of approach that is already half the battle.

* * * *

It is strange how in the pattern of most men's lives the time comes when some knowledge or skill they have acquired by the way, not necessarily in the course of their daily work but by following out their own interests and hobbies, proves of unexpected value. It seems as if nothing we do which adds to our knowledge and powers of creation is ever wasted but as if there is a dispensation at work turning it to good account for ourselves and others. It is a heartening experience when it comes, enabling us to glimpse that there is a pattern.

"For more is not reserved
To man, with soul just nerved
To act to-morrow what he
learns to-day;
Here, work enough to watch
The Master work, and catch
Hints of the proper craft, tricks
of the tool's true play."

* * *

That there is a potential value in each man's life, making it a sacred thing, is upheld both by the moral and civil law, but because to-day those very scientific developments which can be such a great help to man tend to overwhelm and dwarf him, this truth needs to be the more steadily kept in sight. And for this a man has to prove to himself that he *is* something. For the few it may mean assaults like this on the Antarctic to wrest Earth's secrets from her in the very teeth of death. For the many it means the living of a life in a way that will bring increase and enrichment through the use we make of it. The men who go out willingly to face great hazards concentrate a great deal and a great depth of experience into a short span of time. Those of us who take the beaten paths have to gain our experience mainly by the use we make of our leisure, which is the one part of our lives that we can most truly call our own. It can be used to give increase, in a way that will develop the creative powers that are in us, or it can be hardly used at all and allowed to glide past like a dream. But the man who learns to use and know his own powers is the man who will have something to give when the time comes, and even beaten paths have a way of taking unexpected turns. (104)

WORKSHOP FOLDERS

We give on another page the first of a series of folders which should be extremely useful. Their purpose is to enable readers gradually to build up a handy workshop guide book which will contain in concise form the everyday information needed in the workshop. The present series deals with joints; others will deal with wood finishing, timbers, construction, and so on. As each folder is printed on a page which does not bear a normal number, it can be detached easily from the magazine. At the end of the year the whole can be bound together with staples and mounted between protective covers. The folders are printed sideways as it enables all the stages to be presented simultaneously on a single sheet. At the same time the completed set of bound folders can be folded down the centre to be convenient for the pocket or the workshop shelf

Please ask your newsagent to reserve the WOODWORKER for you regularly. It is the only way of making sure of your copy.

HANDICRAFT TEACHERS' PAGE

This is the first of a series of articles on jobs suitable for making in the school handicraft room. In order to make the series interesting, varied, and useful to all handicraft teachers we invite teachers to send in designs which they have found successful in their work. A fee of 2 guineas will be paid for any original design published. Dimensioned pencil sketches with notes describing construction should be sent. A photograph, if available, would be of added help. All photographs will be returned. Designs should be in contemporary style—simple and clean in line and suitable for the average boy to make. The name of successful entrants can be published with the designs if desired.

BATHROOM STOOL

This stool has clean modern lines and can be made of softwood and painted to suit the decorative scheme of the bathroom. A cork seat is glued to the surface of the plywood top

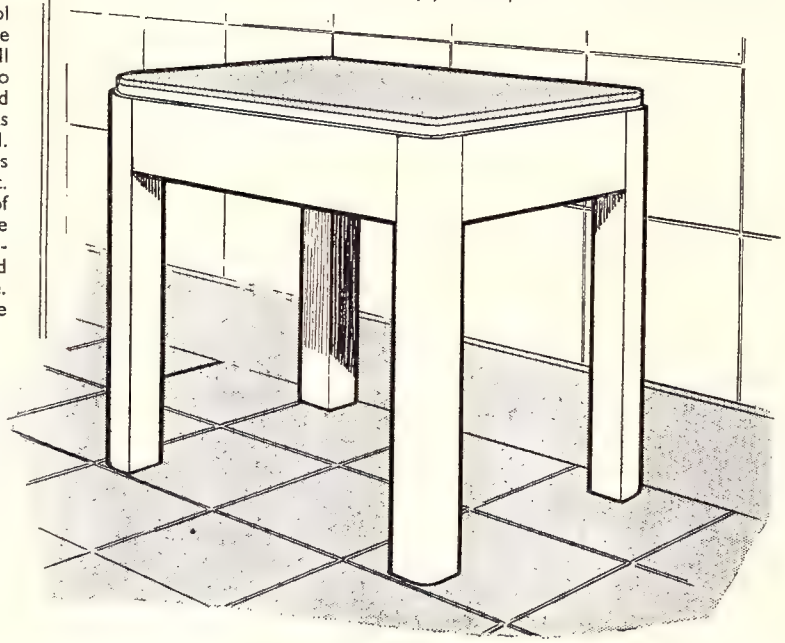


FIG. 1. STOOL OF SIMPLE CONSTRUCTION
This gives excellent practice in the preparation of material, and in cutting mortise and tenon joints

PREPARE the material for the legs and rails. Plough ¼ in. square grooves along the inside faces of the rails ready to receive the buttons which hold down the top. As the buttons are ¾ in. thick it is as well to cut each groove a full ½ in. down from the top edge to ensure that the buttons will draw the top down tightly to the frame.

Joints.—Set out the mortise and tenon joints. Note that the tenons are not central on the rails but are nearer the inside faces to give more strength to the outer edges of the mortises. The haunches may be made square or sloping, the latter method being shown in Fig. 3, as it gives a little added strength to the leg timber. Cut the mortises deep enough to meet each other inside the leg and mitre the ends of the tenons to fit together where they meet. Fit each pair of tenons carefully into each leg and number their positions as you fit them.

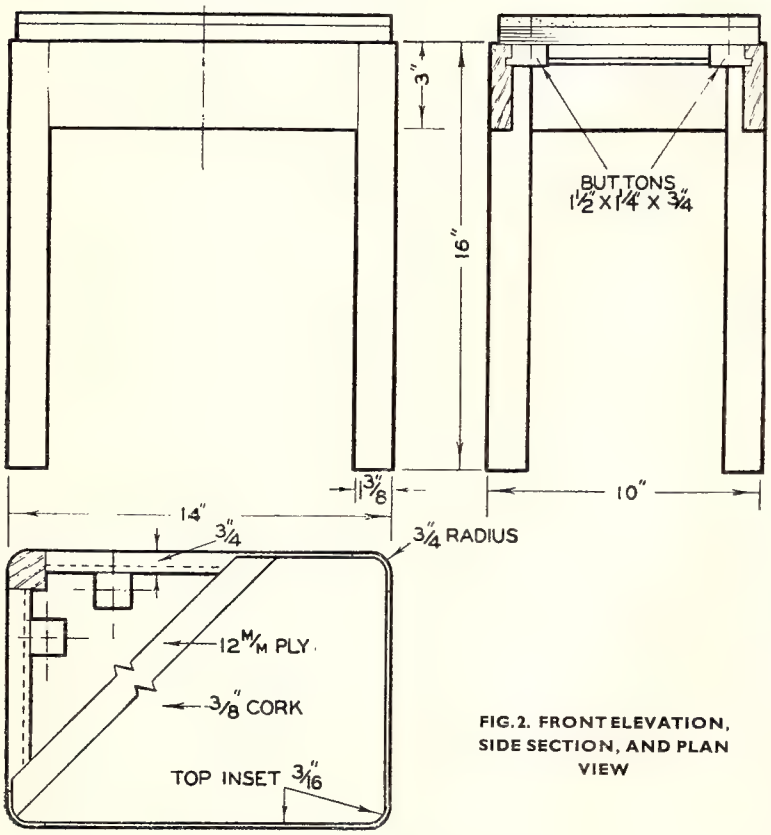
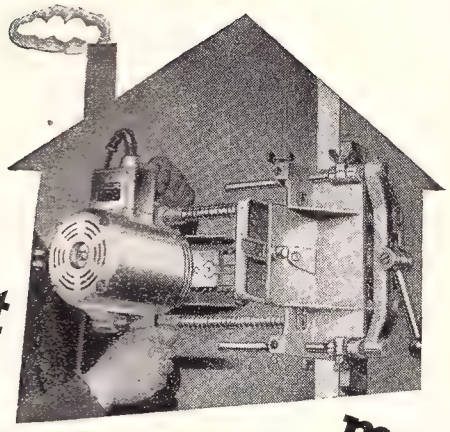


FIG. 2. FRONT ELEVATION, SIDE SECTION, AND PLAN VIEW

Assembling.—The frame may be glued together in one or two steps, the writer preferring the latter. In the first method the whole frame is glued together and a length of stout string is wound around it three or four times and tied off. Short strips of wood are inserted between the threads of string at the middle of each side and turned to twist the string. By this means the string tightens and pulls the joint together.

If sash cramps are used glue the long sides together first, making sure that the legs are square with the rails and no surplus glue is left in the bottom of the mortises still to be glued. When the glue has set lay the assemblies on the bench and clean up rails and legs to make the

Although intended primarily to help handicraft teachers, all the designs will be equally useful to the general reader.



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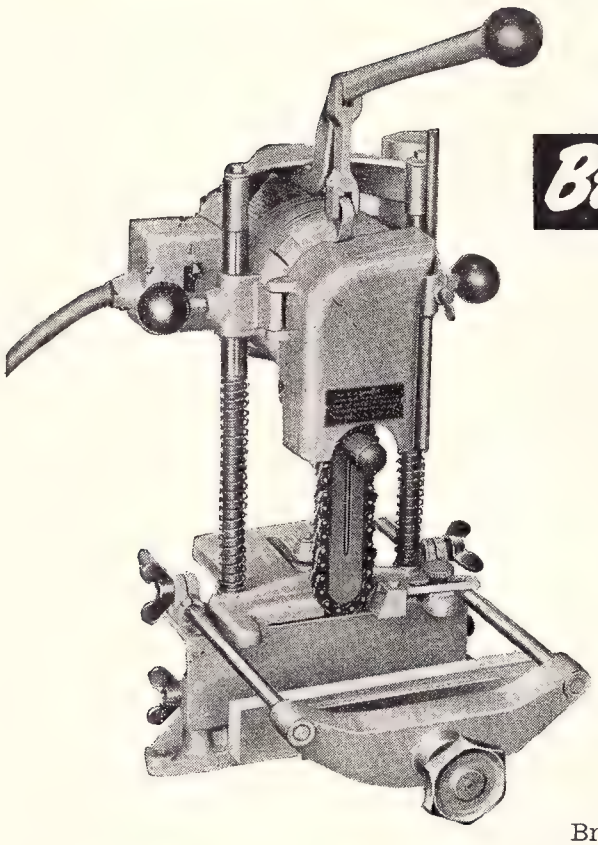

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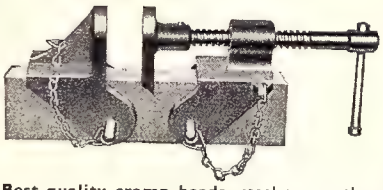

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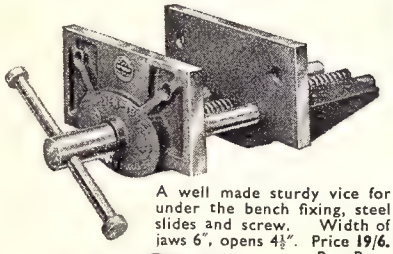

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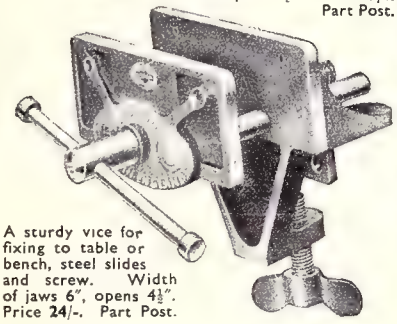

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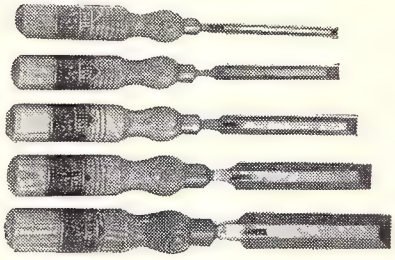

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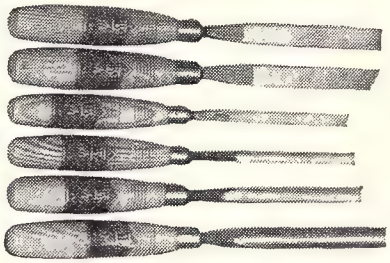

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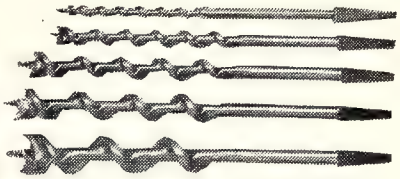

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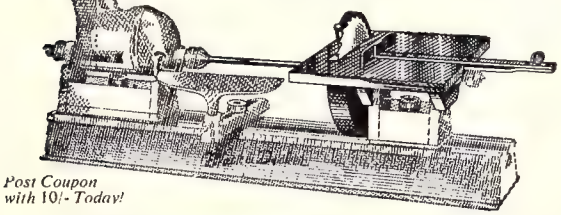

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joints flush. Glue in the short rails and this time cramp the whole frame together, making sure that it is square across the top and that the legs are square with the freshly glued rails.

Remove the cramps when the glue has set and clean up the end faces, making sure that the frame is held firmly to the bench while so doing to prevent racking out of square.

Fitting the Top.—Round the outside corners of the legs to a $\frac{3}{4}$ in. radius with a smoothing or hollow moulding plane and glasspaper smooth. This job is better carried out after gluing because if done before the cramps do not gain much purchase and they are inclined to pull the legs out of square with the rail shoulders.

Prepare the 12 mm. plywood top making it $\frac{3}{16}$ in. smaller than the frame on all sides. Round off the corners with chisel and spokeshave concentrically with the leg curves. Plane the top edges of the frame flat. Make the buttons from a length of hardwood, cutting $\frac{1}{4}$ in. square tongues on each and drilling and countersinking each for a 1 in. No. 8 screw. Attach the ply top to the frame using two buttons along each side.

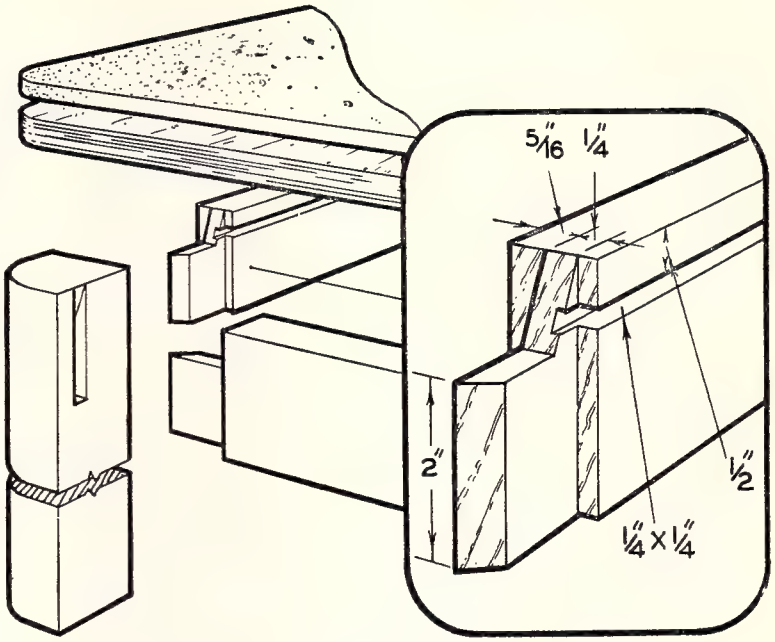


FIG. 3. DETAILS OF MORTISE AND TENON JOINTS

Cut the cork to size with a fine saw and round the corners with fine glasspaper or smooth file. Glue the cork to the plywood, being careful to obtain an even pressure over the whole surface. The edges of the cork can be trimmed finally after the glue has set.

Finishing.—Brush a coat of french polish over any knots. Give the whole stool, except for the cork seat, a priming coat, two undercoats, and a final coat of enamel paint to the colour of your choice.

CUTTING LIST

	Long ft.	Long in.	Wide	Thick
4 Legs	1	5	—	$1\frac{3}{8}$ sq.
2 Side rails	1	$1\frac{1}{2}$	$3\frac{1}{4}$	$\frac{3}{4}$
2 End rails		$9\frac{1}{2}$	$3\frac{1}{4}$	$\frac{3}{4}$
1 Top, plywood	1	2	10	12 mm.
1 Seat, cork	1	2	10	$\frac{3}{8}$
8 Buttons—one piece ..	1	4	$1\frac{3}{8}$	$\frac{3}{4}$
8 C/S screws			1 No. 8 gauge	

Allowance has been made in lengths and widths. Thicknesses are net.

(72)

ELECTRIC PENDANT

(*Continued from page* 16)

to the lamp-holders, and care must be taken to twist the right conductors together, otherwise a short circuit would result. The blocks securing the lamp-holders are screwed down with $\frac{3}{4}$ No. 6 round-head screws.

The loop for the suspension of the holder may be formed from a piece of No. 12 S.W.G. brass wire, the ends of the loop being bent inwardly to fit into holes in the centre piece.

If the pendant is to be stained and polished, this should be done before the parts are put together. (103)

NEW TIMBER

(*Continued from page* 9)

an attractive brown colour with a figuring of darker streaks, has a moderately close texture, a grain that is variable from straight to moderately interlocked, and an average weight of 38 lb. to the cubic feet.

Sepetir works well in all processes, though it is sufficiently coarse textured to need some care in filling the grain prior to polishing: after the latter treatment some samples of the wood might well be mistaken for walnut. Where the grain is interlocked more sanding than usual may be necessary to bring the wood to a good surface. Mortising, drilling, and so on, can be done quite cleanly, and the straighter-grained specimens will usually turn quite well.

This timber dries slowly but shrinks only slightly in so doing, and does not appear to warp to any great extent. Once it has been properly seasoned it will hold its place very well. Both the strength and durability factors are quite satisfactory for the purposes for which the wood is likely to be used in this country, though the sapwood may be damaged by wood-borer beetle. (99)

Practical Geometry for Carpenters, Joiners, and Woodcutting Machinists, by A. B. Emary. This is an excellent book in its class, dealing as it does with the practical problems that arise. All students, masters, and men in the trade will find it extremely useful. Apart from the essential basic information, it gives the geometry as applied to roofs, raking mouldings, triangular and circular louvres, scrolls and curtail steps, continuous strings, handrailing, double curvature work, and spindle and tenon cutters. The book is well illustrated with line diagrams which are prepared in a way which makes the solution of the problems as obvious as possible. The author is to be congratulated. Measuring $9\frac{3}{4}$ in. by 7 $\frac{1}{4}$in., and containing 186 pages, the book is published by Sir Isaac Pitman & Sons Ltd. at 17s. 6d. net.

4. NECESSARY CONDITIONS: THE RUBBER

TIME is an important factor in the assessment of pure skill. It largely determines selling costs and therefore material values. However, if we discount the time factor there is no reason why the home craftsman should not produce a finish equal or even superior to the commercial variety.

Now you can do good woodwork amid the frozen wastes of the Far North or in the torrid heat of an equatorial jungle. The gentle rain from heaven can be dripping from your eyebrows or the trade winds ruffling your hair. You may have enough shavings around your bench to bed a brontosaurus, or be so covered with sanding dust that the casual observer might be excused for thinking that you were baking scones. But you cannot do good french polishing under these conditions.

FIG. 1. POSITION OF WORK WHEN POLISHING
By facing the light the progress of the work is clear. The path of the rubber can be seen, and any blemishes are at once obvious

Three Necessary Conditions.—Methylated spirit needs heat to evaporate quickly. Put a little on the back of your hand. It immediately feels cold. The reason is that the meth. is taking the heat it needs from your skin. You can imagine, therefore, how a surface is constantly losing heat as you work on it with the rubber.

Then again there is moisture in the atmosphere, more on some days than others. If the air in contact with the surface loses enough heat it will release some of its moisture on to that surface, and water is fatal on any varnish film being hard. We have all seen a similar occurrence when a glass containing cold water starts to show beads of moisture on the outside ; or in the evening when the earth cools and dew is deposited. It is essential, therefore, to work in warm, draught-free conditions. The shellac film should be drying so fast that cigarette ash dropped on it within seconds can be blown clean away. In our normal summer heat aids are unnecessary but for the other 364 days keep the temperature around 70 deg. Farenheit.

Then again it is necessary to see the surface and what is happening to it. Good light is essential and the job must be between it and your eyes, as in Fig. 1. By adjusting the position of your head you can then at any time see every detail as the rubber moves along. Artificial light is satisfactory so long as no colouring is involved. If you work with your back to the light you will, so far as the varnish film is concerned, see about as much as Nelson did through his telescope on an historic occasion.

Thirdly, the place must be clean. There is enough dust in the air without having it lying around as well. Do not be like the woodworker we once saw polishing on a lathe loaded with swarf and sanding dust. Unfortunately he sneezed at the wrong time and ruined the job.

There is no need to have thermostatically controlled heating, air conditioning, or even a thermometer on the wall. A warm, well lit room in your own home is ideal. If the film starts to fog up stop work immediately. If you raise the temperature and watch carefully you will see the fogging disappear quite suddenly of its own accord.

Charging the Rubber.—Now we have it on the authority of various books we have perused on the subject that the perfect method of charging a rubber is to open out the covering cloth, sprinkle a few drops of polish on the top of the fad, and refold. Personally we think this unnecessary. We pour the polish into an open-mouthed jar, dip the rubber in it so that the face is about ½ in. below, hold it there for one or two seconds, lift it above the level of the polish, and squeeze out the surplus, at the same time retaining the rubber shape.

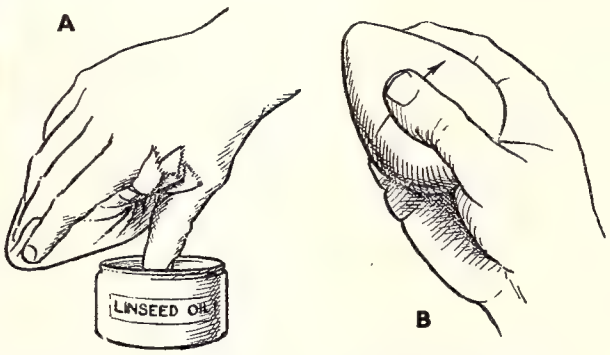
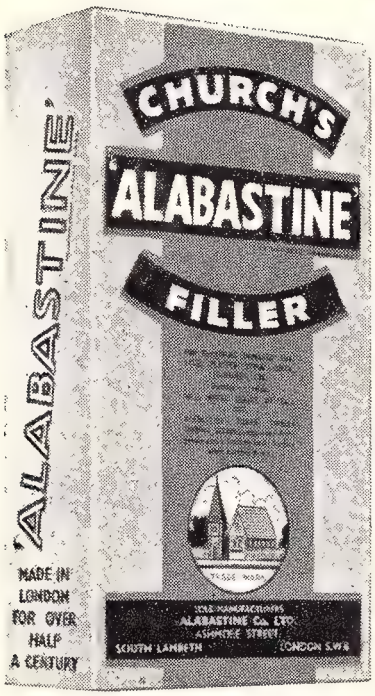


FIG. 2. ANNOINTING RUBBER WITH OIL
The thumb can be dipped into oil and smeared across the face of the rubber

If, as is usual, we now want to oil the rubber, we dip the thumb of the same hand in the oil jar and draw this

(*Continued on page* 4)



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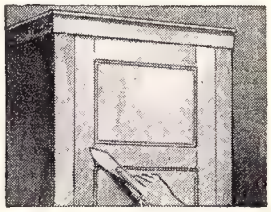

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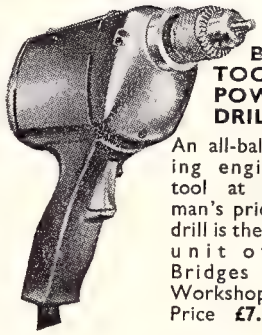

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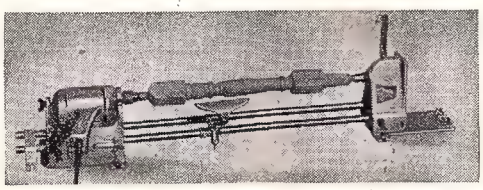

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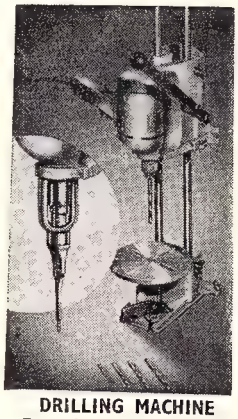

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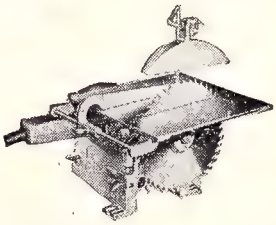

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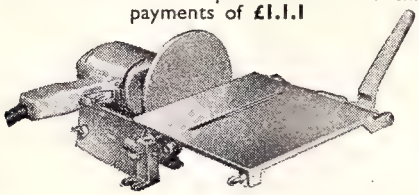

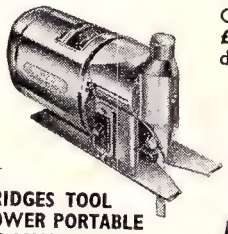

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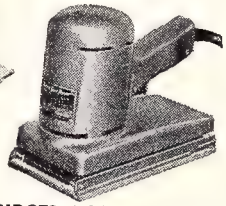

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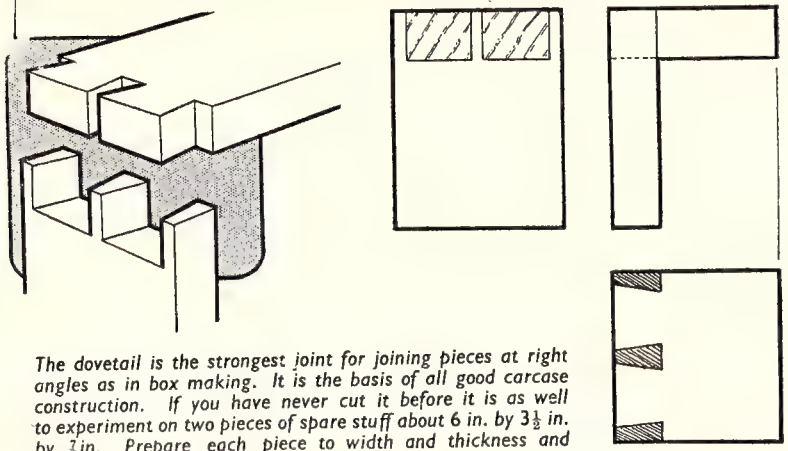
CUTTING THE THROUGH-DOVETAIL



The dovetail is the strongest joint for joining pieces at right angles as in box making. It is the basis of all good carcase construction. If you have never cut it before it is as well to experiment on two pieces of spare stuff about 6 in. by 3½ in. by ⅞ in. Prepare each piece to width and thickness and square the ends

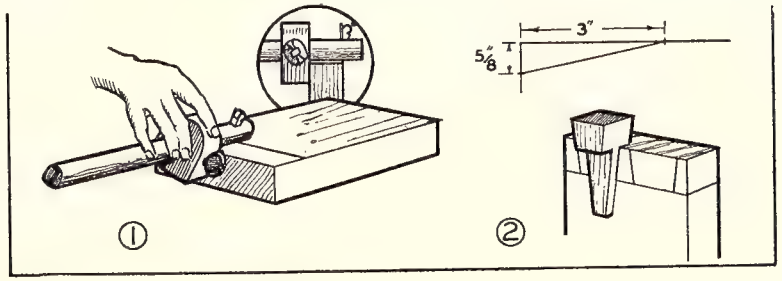
TAILS

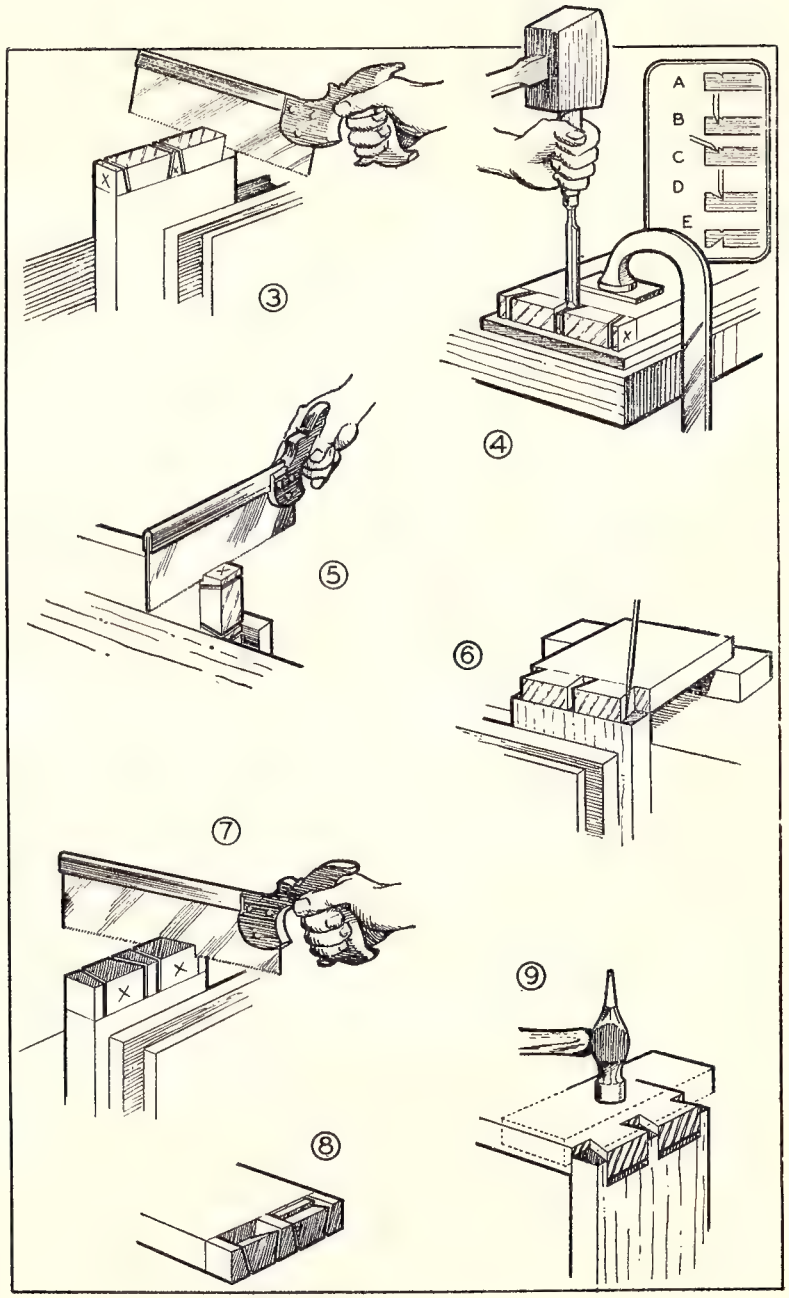
1. With cutting gauge set to the thickness, mark both sides of one end of each piece.
2. The slope of the dovetails varies between five and eight to one. For general purposes use the angle shown. It is a help to make a template either of wood or brass. Mark the slope on one face and square across the end. Indicate the waste wood with appropriate marks (3).
3. Place work in the vice and saw down to the cutting line.
4. Clamp to the bench between suitable packing pieces and chop out waste in stages. Chisel a shallow sloping groove up to the gauge line (A). Chop down a little in front of it, preferably with a bevel-edged chisel (B) and remove a triangular chip (C). Continue until about halfway down, and carefully pare down to the gauge line (D). Reverse the wood and repeat. A coping saw can be used to remove the major portion of the waste, but it is still necessary to pare down to the line with the chisel.
5. Remove outer pieces, cutting alongside the gauge line on the waste side.

PINS

6. Arrange the piece for these upright in the vice and place the dovetailed piece *exactly* in position, supporting the end on a suitable block. Using a pointed scriber mark each side of the tails. Square down to the gauge line and mark the area to be removed.
7. Place upright in the vice, and saw down on the waste side, just leaving the lines in.
8. Remove waste with sloping cuts (see also 4).
9. Dovetails should not be fitted together before gluing as this loosens the joint. To prevent bruising place a waste block over the joint when assembling.

(100)





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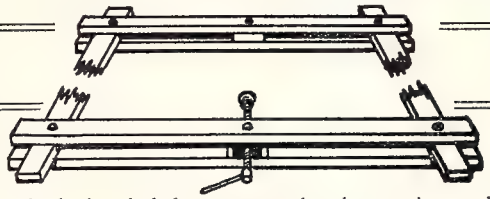

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MERANTI	White, yellow, light or dark red.	35 lb.	Interlocked.	Moderately coarse but even.	Moderately easy to work. Polishing sometimes causes trouble.	Moderately resistant. Sapwood may be damaged by powder post beetle.	External work, joinery, furniture.	Malaya.
KERUING	Light red to reddish-brown.	40-55 lb.	Straight to shallowly interlocked.	Moderately coarse but even.	Not difficult to work; sometimes resinous	Good, but sapwood liable to insect attack.	External work.	Malaya.
SEPETIR	Brown, with darker streaks.	38 lb.	Straight to shallowly interlocked.	Moderately fine, even.	Good, needs care in filling before polishing.	Good; sapwood may be damaged by borer beetle.	Cabinet-work, furniture.	Malaya.

AS a source of timber the Far East has never received the attention from consigners as has the Soviet Union or the North American continent. Until the outbreak of the last war timbers from Malaya and neighbouring regions were not very common on our markets, but they are now among the more important of the " new " tropical imports. This article will therefore be devoted to some of those woods.

Meranti is a timber of Malayan origin that may be so variable in colour that it is sold under such names as " white," " yellow," " light red " or " dark red " meranti. Almost identical timbers are imported from Borneo and the Philippine Islands under the names of " seraya " (or seriah) and " lauan " respectively, but again some colour prefix may be added. In addition, lauan may sometimes be sold as light red or dark red Philippine mahogany, though it is not a member of the botanical family that produces true mahogany.

The white and yellow merantis are whitish to yellowish in colour when freshly sawn, but eventually fade to yellowish-brown, while with the reds the fresh colour is a shade of pink which darkens to light or dark reddish-brown, both types having distinct whitish lines on the surface. The texture is in all cases moderately coarse but even, the grain is normally interlocked, with the weight in the region of 35 lb. to the cubic foot.

The darker merantis are more resistant to decay than are the lighter woods, but the latter suffer less from insect attack, though the sapwood of all types is liable to damage by powder post beetles. They are all very similar in that preservative treatments add little to their effectiveness, as brush treating with creosote gives little extra protection, while even if the timber is steeped the degree of penetration will be very slight and irregular.

In all working processes apart from sawing the varieties behave in a similar manner, though white or yellow meranti is definitely harder to saw. Nail, screw, and glue holding properties are good, drilling and mortising is clean, and more often than not the timber is not sufficiently deeply interlocked to cause much trouble in planing. The prominent white lines on the surface can be troublesome in polishing processes. The ease of working will depend largely on the weight of the sample involved, for with such a wide range of species included under the description of meranti there is bound to be a more than average span of densities.

The difference in weight will also account for differences in strength properties. As regards seasoning all species are very similar, i.e. slow in drying, and with some tendency to warping in thin stock. Once having been seasoned the degree of movement is about average.

Meranti is a general purposes timber. It can be used for external as well as internal purposes, and for joinery and furniture suitably coloured grades are often used as a substitute for true mahogany. The seraya and lauan timbers may be used for the same purposes as the merantis.

Keruing is another timber of widespread distribution. This particular name is restricted to wood from Malaya, and the titles of gurjun, yang, hora and kruen may be used for timber exported from India (and Burma), Siam, Ceylon, and North Borneo respectively.

This is again rather variable in colour but the heartwood is usually light red to reddish-brown when freshly sawn, darkening after exposure to the air, with a moderately to well-defined sapwood ranging from greyish to purplish-brown. The grain is straight to shallowly interlocked, the texture moderately coarse but even, and the weight variable from 40 to 55 lb. to the cubic foot. Keruing, as a whole, is heavier than gurjun or the other timbers.

The wood is extremely strong and the heartwood resistant to fungal attack. These factors coupled with its weight means that the timber is used more for external work than for joinery or similar purposes. The sapwood of all varieties is liable to insect attack. The working properties of the wood vary according to the weight, and some samples contain considerable quantities of resin that may cause tools to get very gummy and make painting and similar processes rather difficult. Apart from this gumminess, however, even the denser samples are not really difficult to work.

Keruing dries slowly and shrinks considerably while so doing. It is likely to split at the ends during seasoning and sometimes develops fine surface cracks. The timber is not exceptionally stable, but is about average. One of the principal advantages of the wood are the good sizes in which it can be obtained.

Sepetir.—A timber that has come to the fore recently is *sepetir* from Malaya, a useful wood for cabinet work, furniture, and high-class fittings and joinery. This is of

(*Continued on page 7*)

I. MAKING BA

By C. H.

These doors were used widely during the 18t still used to-day. They serve to break up a la feature in themselves. The principle of settin detail. This article deals with straight membe are made and fitted. These last named con of wood involves certain complications when of construction and proc

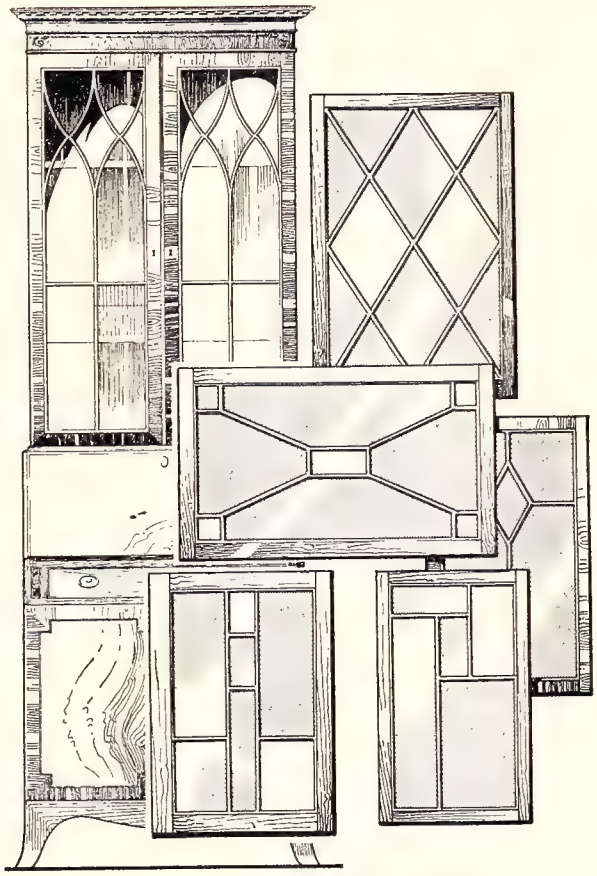


FIG. 1. TYPICAL BARRED DOOR DESIGNS
For bookcases, display cabinets, etc., barred doors are most effective

BARRED doors consist of three main parts: the main outer framework, the grooved mouldings, and the back bars which form rebates for the glass. In all cases the outer frame is made up in its entirety first, but from this point on either of two methods can be followed. You can fix the mouldings first and add the bars to them, or you can reverse the order. Each method has its partisans, and quite often those who follow the one have quite strong feelings about the correctness of their method. However, both sides turn out equally good work, and, as it is the result which matters, it is immaterial which method you adopt. Here we fix the mouldings first.

At the outset you have to decide whether the glass is to be puttied in or held with beads. If the former the construction of the main frame is simplified because equal shoulders can be cut at the tenons. When beads are used the shoulders must be unequal as otherwise the rebates of framework and bars will be of different widths, and the beads will look wrong.

The idea is made clear in Figs. 2 and 3. The puttied-in method is in Fig. 2 and is the simpler to work. The difference between the rebate widths shown at (A) and (B) does not matter; the putty is simply bevelled at a different angle. To bring the rebates to equal widths to suit beads the method in Fig. 3 is followed.

Setting Out.—Whichever system is followed, there is one golden rule to follow in the setting out. Always work to the centre lines of the mouldings. Unless you do this you can get some curious complications, especially if you fix the bars before the mouldings and there are diagonal sloping members. You may find that, although the bars are apparently correct, the moulding just cannot mitre. Begin then by drawing in centre lines, remembering that the framework moulding is half the width of the moulding of the bars.

Fit a flat plywood panel closely in the rebate as in Fig 4 (A), and mark out on it in pencil the design,

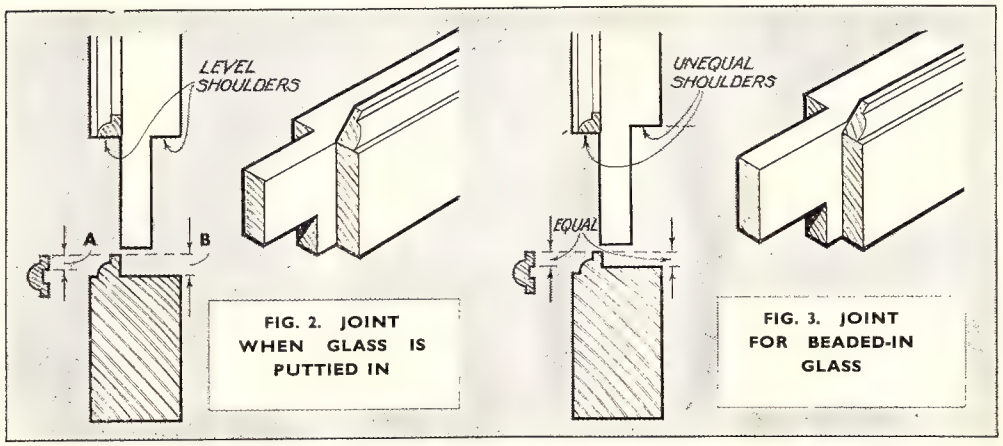


FIG. 2. JOINT WHEN GLASS IS PUTTIED IN

FIG. 3. JOINT FOR BEADED-IN GLASS

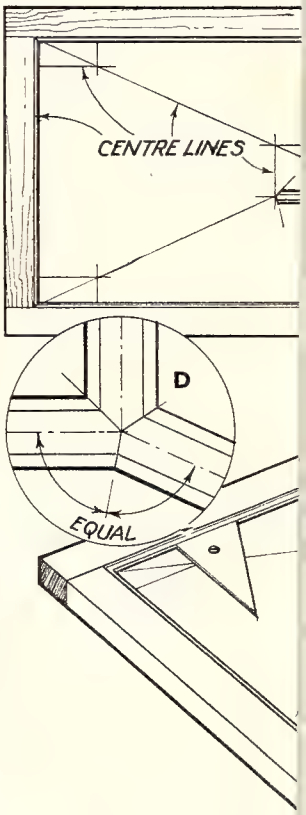


FIG. 4. SETTIN

RRED DOORS

YWARD

tury, and with modifications in detail are plain glazed surface and are an interesting is much the same whatever the design and ater we hope to show how curved mouldings to the same rules, but the straight grain s have to be worked, and special methods e have to be followed

WORKSHOP PRACTICE

In this completely new series we hope to cover an extremely wide range of subjects. The articles will be written by men of long experience in one branch or another of woodwork, some of them attached to Training Colleges and Schools, others in the cabinet making or joinery trades. Each brings his own particular knowledge and experience for the benefit of readers who should find the articles of great value. To launch the series this first is contributed by the editor whose books on woodworking subjects are known to most readers.

putting in the centre lines and working to them. An error into which many fall when there are diagonals is to draw centre lines from the corners formed by the edge of the moulding. If the door were a square this would be correct, but in an oblong shape this will throw out the whole thing. Since the frame moulding is just half of the bar moulding the line to work to is at the corner level with the shoulder, and the centre line should be drawn from this as at (B). The fact that it does not align with the mitre of the moulding does not enter into it.

At each side of the centre lines draw in other lines marking the width of the mouldings. This enables the mitre lines to be drawn in as at (C). These always halve the over-all angles of the intersecting lines as given at (D), and where three mouldings meet it will be seen that all the mitre lines intersect at the same point on the centre lines.

At this stage the slots or mortises for the bars will have to be cut, because it would be extremely difficult to do this after fixing the mouldings without damaging the latter. Mark on the frame the points where the centre lines cut the frame. Remove the panel and transfer the marks to the rebate. Cut in mortises equally at each side of the

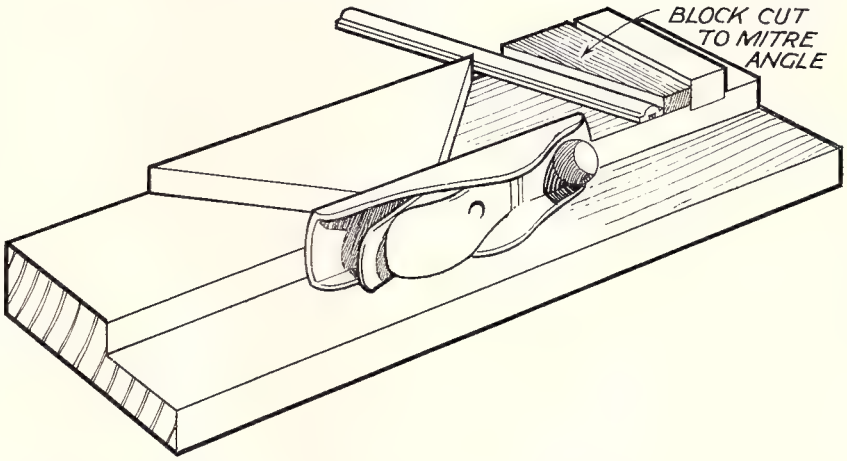


FIG. 5. (*Above*) TRIMMING MITRES OF MOULDINGS ON SHOOTING BOARD

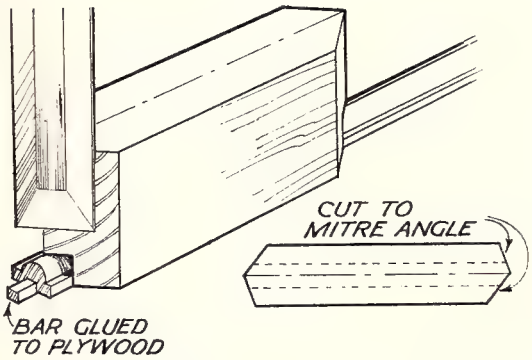
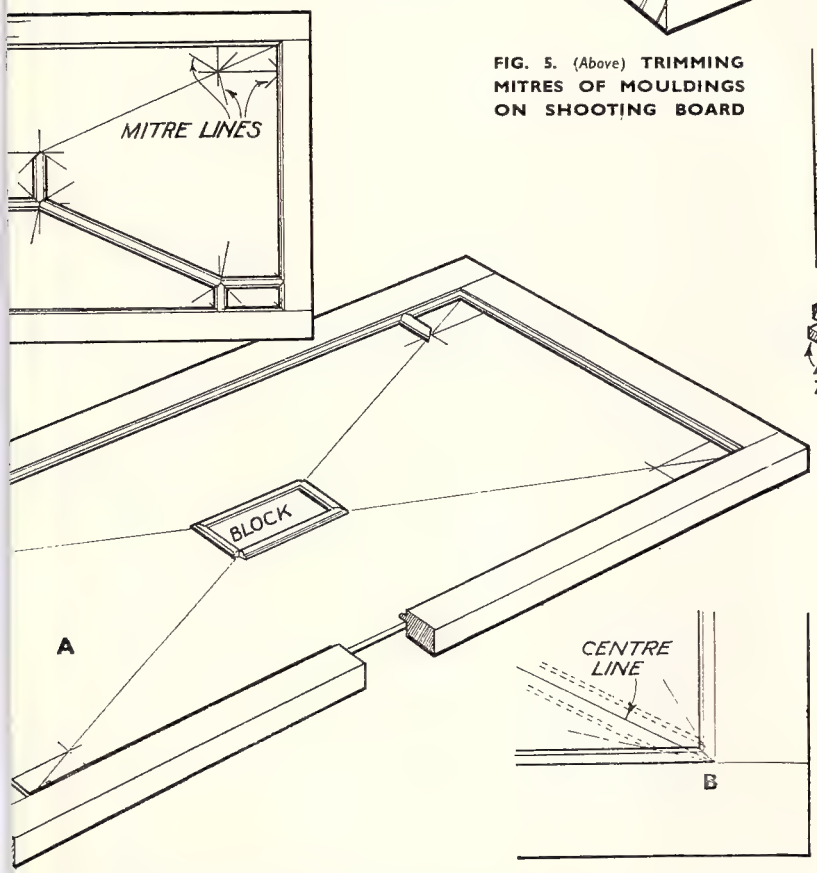


FIG. 6. CHISEL USED AGAINST TEMPLATE FOR CUTTING MITRES



T OF BARS ON PLYWOOD PANEL FIXED IN FRAME REBATE

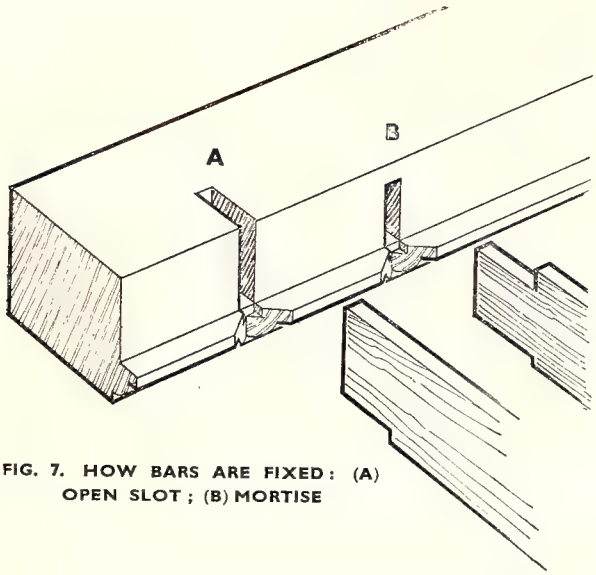


FIG. 7. HOW BARS ARE FIXED: (A) OPEN SLOT; (B) MORTISE

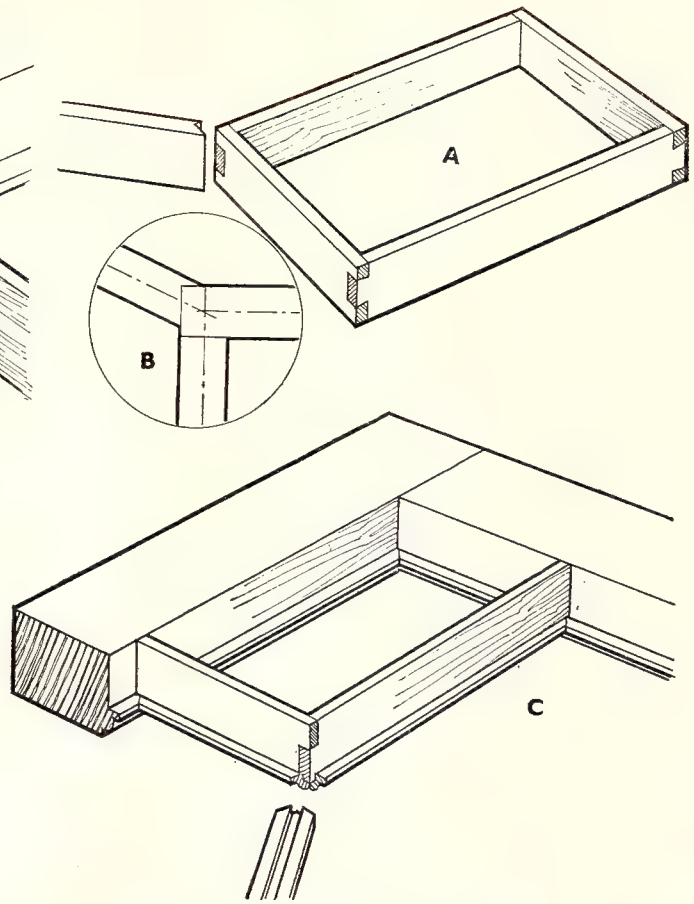


FIG. 8. JOINTS USED FOR THE BACK BARS

mark (B), Fig. 7. For a cheaper job the mortises run through to the back and become notches as at (A), Fig. 7, but this is not so neat.

Mitreing the Mouldings.—Fit the mouldings on the plywood panel. They should be polished in a length beforehand because it is almost impossible to get clean corners otherwise. They are best cut with a fine-toothed saw and trimmed with either a plane on the shooting board, or with the chisel used with a template. In the former case a block cut to whatever angle is needed can be placed on the shooting board as in Fig. 5. Use a plane with as fine a mouth as possible, and make sure that it is keen and set fine.

For the chisel method make a template as in Fig. 6 and use the chisel against this. As the wood above the groove is liable to splinter away under pressure, trim a piece of the wood to be used for the bars to the groove depth, and glue it to the board. Use a fair length because you will gradually cut it away as you mitre the moulding. In the case of small independent squares in the design, these can be mitred around a thin block pinned to the plywood as at (A), Fig. 4. For some of the longer members it is a help to knock in fine pins at each side of the mouldings to hold them in position. In the case of the framework moulding, this will have to be chiselled. Work to mitre lines drawn in on the panel.

It is important that the gluing of the mitres is clean without unnecessary surplus. Just a touch on the actual mitre is all that is needed. A piece of gummed tape beneath each mitre is a help as it holds the parts together and prevents them from sticking to the panel. Set aside for at least twelve hours to harden, and then gently ease away the panel.

Bars.—Reverse the panel so that the fronts of the mouldings lie on it and are thus supported, and fit the bars into the grooves. Where they join the frame they have one of the alternative joints shown in Fig. 7 (A and B). Where the bars join each other at right angles they can be dovetailed together as in Fig. 8 (A), and dropped as a whole into the grooves. There is a complication where the corner squares meet the framework, however, in that it is awkward to assemble the whole into the job especially when the bars are tenoned rather than notched. A halving joint is therefore cut as at (C).

Diagonal or sloping members are bird's mouthed over the corners as at (B). When the slope is not at 45 degrees it will be found that the notch is one-sided as shown enlarged. (It is this that is often misleading when the bars are fixed first.) Again take care to avoid any excess of glue when fixing the bars as it is awkward to remove cleanly. It is usually sufficient to lay lengths of wood with weights on them over the bars to hold them in place whilst the glue sets. The moulding of course is supported on the plywood panel. To strengthen the corners, strips of fine canvas are glued in all angles. (70)

Woodworking, by J. S. Chappell. This is a useful book for the man who wants a good all-round book on woodwork. It contains chapters on the various tools and their use, timbers, joints, methods of construction veneering, turning, finishing, and concludes with examples of work. It is a well-produced and well-illustrated book, and contains a great deal of useful information. It measures 8¼ in. by 5¼ in. and has 270 pages. The home-craftsman will find it a useful addition to his bookshelf. Published at 15s. net by Cassell & Company Ltd., 37 St. Andrew's Hill, London, E.C.4.

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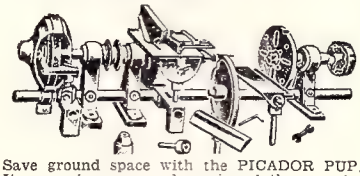

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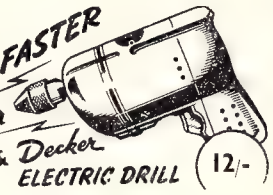

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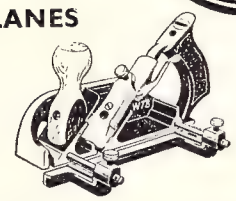

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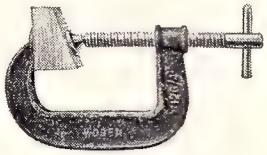

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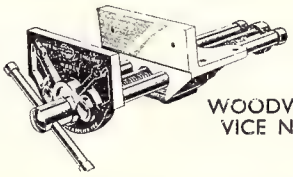

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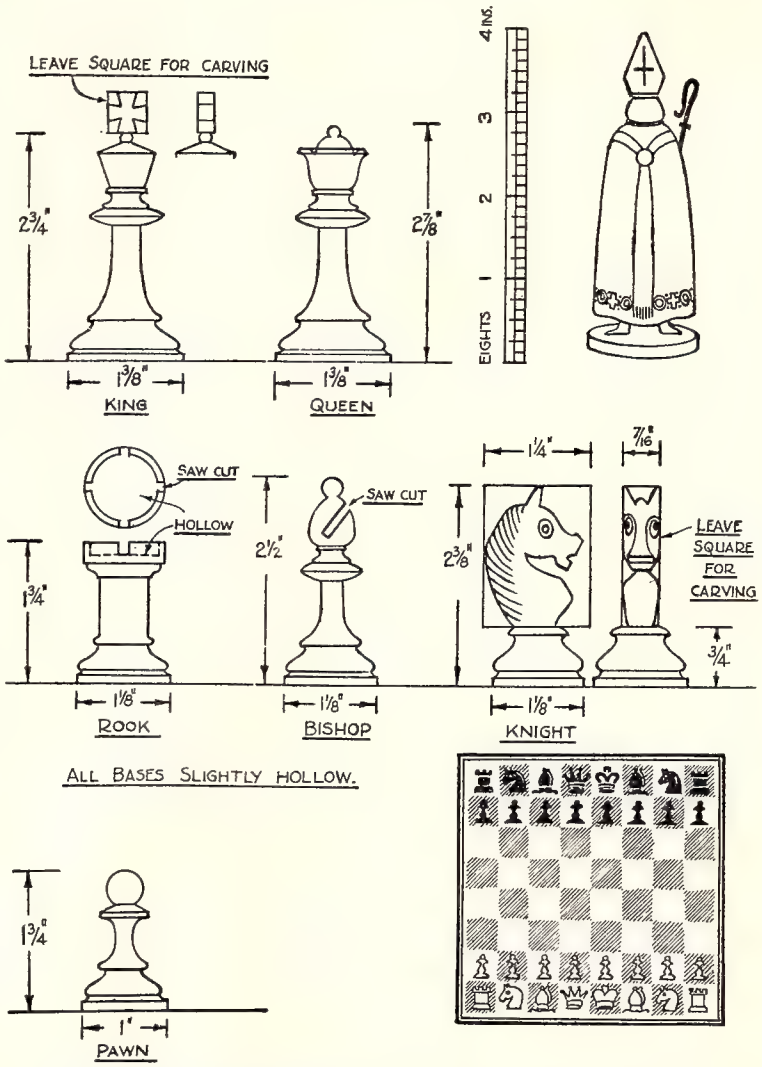
TURNING YOUR OWN

SET OF CHESSMEN

Chess is a fascinating game. It has been going on for quite 1,400 years, so they tell us, and will probably be played for the next 1,400 years. Do not think chess is only a game for the "brainy" person. A certain amount of intelligence is required, but once the moves and rules have been mastered skill in the development of the game is easily acquired with practice. But this article is not meant to tell you how to play, but how to make the pieces

HERE the pieces are shown in their relative order of importance. The king comes first, for while his fighting capacity is small the game centres round him. His consort the queen comes next. She is very powerful in his defence and for attacking his opponents. Next in order of merit come the rooks (or castles), the bishops, and the knights. Last of all the pawns. There are a good many of them, but we could not do without them. Contrasting coloured woods must be used or, alternatively, birch, beech or similar hardwood with a close grain, sixteen pieces being stained black and polished, and sixteen left a natural colour and polished. Box and ebony are the ideal woods. Padouk and satinwood pieces with a similar inlaid board or table would be pretty, but whatever the wood it must be hard and tough.

Sizes in the rough ready for turning are: King, $4\frac{1}{4}$ in. by $1\frac{1}{2}$ in. square; Queen, $3\frac{3}{4}$ in. by $1\frac{1}{2}$ in. square; Bishop, $3\frac{1}{2}$ in. by $1\frac{1}{4}$ in. square; Knight, $3\frac{3}{8}$ in. by $1\frac{1}{4}$ in. square; Rook, $2\frac{3}{4}$ in. by $1\frac{1}{4}$ in. square; Pawn, $2\frac{3}{4}$ in. by $1\frac{1}{8}$ in. square. These sizes allow an $\frac{1}{2}$ in. on at each end for the chuck and a little on the square for turning. An inexperienced turner should allow himself another $\frac{1}{8}$th of an inch on the width and thickness each way All bottoms should be slightly hollowed or covered with thin felt or billiard cloth. The squares of the board are 2 in. to suit the men, i.e. the actual playing surface is 16 in. by 16 in. (660)



DESIGNS FOR CHESSMEN TO BE TURNED IN HARDWOOD

The wood could be held in the cup chuck or self-centreing chuck. After the initial rounding with the gouge the entire turning should be done with scraping tools. Old files can be ground to suitable sections to enable small detail to be turned, the serrations on the face being ground away

---

POLISHING PIGEON-HOLES. *A reader inquires the best way of doing this, and asks whether brush polish is necessary.*

Reply—(1) The best method is to french polish all interior surfaces before assembling. It is impossible to get results with a rubber, and difficult enough with a brush in such a restricted space. If the corner and other joints are of the correct type there is no difficulty about avoiding polish on the bearing surfaces. This is, in any case, a minor consideration compared with the advantage gained by polishing the insides when the job is apart.

(2) Brush polish is exactly the same as french polish and is made the same way with shellac dissolved in meth, and thinned to requirements.

(3) We should tackle this job by removing the back panel and polishing it separately. The pigeon-holes would be accessible from both sides and reasonably clear for brushing across the grain

(4) If you cannot remove this panel use synthetic varnish. It is safe to use this over any polish which might have been applied. It should be smoothed first with fine paper. The varnish will give you time to lay a uniform coat without leaving brush marks. (7125)

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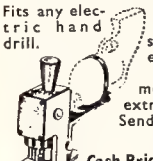

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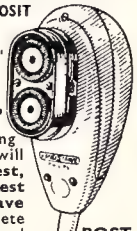

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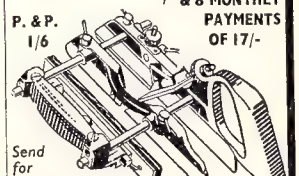

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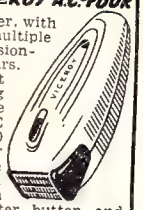

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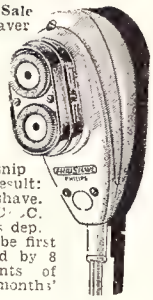

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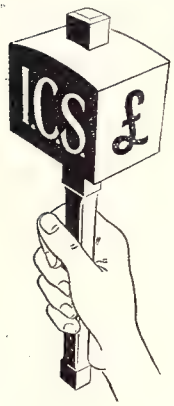

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SOFT POLISH, PIN HOLES, ETC. *A.W.H. (Greenford): "I find when polishing that on an otherwise good surface I get pinholes. Often small blisters develop, and burst. Another trouble is that the polish will not set hard."*

Reply.—If a french-polished surface "prints"—that is, takes a permanent finger-print on handling after a day or two—the polish is of poor quality. Shellac is easily debased with other cheaper gums and, if this is overdone, the capacity for quick hardening is slowed or lost completely. The only remedy is to discard it and wash off that already used with meth. Trade quality polish, which will eliminate all your troubles, may be obtained in the usual types from any reliable polish supply house.

Pin holing and bubbling always occur over a pore in the wood surface. They are caused by escaping solvents. The basic cause, usually, is a too quick build-up of the polish film. The plastic nature of the polish used would encourage it. It is more common in cellulosing and will not normally occur with good french polish. It can, in any case, always be eliminated by proper grain filling. Tackle the job as follows:

(1) Wash off the old polish.

(2) Apply a single coat of the new polish. When hard (one hour) fill the grain with *Alabastine*. Remove as much surface filler as possible before it sets. Any surface filler remaining when hard may be removed with superfine steel wool used along the grain.

(3) Remove the white dust still on the surface. Wipe over with a rag and raw or boiled linseed. Leave the surface as dry as possible. Shield it from dust.

(4) One day later start the polishing routine. (484)

BLACK MARKS ON TEAK FLOOR *E.R. (Streetly): "We have a teak block floor which has become dirty. I polish it with a proprietary wax, but it does not remove the black marks."*

Reply.—It is most likely that the black marks are merely accumulations of wax. When a waxed floor is swept it leaves behind a film of dust which can be removed only by washing. It is not customary to wash a floor on each occasion when it is polished, but the solvent action of the new wax polish lifts the dust film and deposits it in other places which are possibly not so smooth; gradually dark patches are built up. If this is the case with your floor, all you need do is to wash off all the old polish and start again.

Teak varies in colour from a very pale brownish yellow to a rich reddish brown, changing to its darker colour by seasoning and exposure to light and air. Judging from your remarks, however, we do not think this factor need be considered; if this were the case the variation in colour would probably present a more attractive appearance.

Before deciding to treat the whole, we suggest that you wash a small portion as a test. Use a fairly strong solution of detergent or soda, working on a patch at a time and leaving it until the top layer of wax is softened, then rinse off with clean water. The final washing is best done with white spirit, the idea of this being to avoid removing the sealing coat, with which, no doubt, the floor was first treated. If only detergent or soda is used or by any chance the sealer is removed it will be necessary to reseal the surface with two coats of button polish before proceeding with wax polish. (48)

FINISH FOR OAK GATES *J.E.R. (Wheathampstead): "I have a pair of almost new oak gates. The wood is dry and splits have appeared. My neighbours are using linseed oil, but the effect is not permanent. I wish to make the gates weatherproof."*

Reply.—Experience has shown that the mere application of linseed oil to exterior oak—while having a limited preservative effect—is not conducive to a durable or attractive appearance. We suggest that you clean the whole of the surface well by scraping with a cabinet scraper or one of the "Skarsten" type, and finish with a suitably coarse steel wool. Every part should be treated meticulously and equally. This should remove any previous coating. From what you say it would appear that the use of a paint solvent is unnecessary.

If the oak has lost its colour, or if it is too light for you, its appearance can be improved by lightly staining with burnt umber in oil, which we will explain presently. To determine whether it needs staining, wet a patch with water—this will give you an idea of what it will look like unstained. After cleaning, damp the oak well with water and allow to dry; then paper off the raised grain with 1½ glasspaper.

Following this the procedure is as follows:

(1) Prime with one part of Universal Medium to two parts of raw linseed oil. Apply with a brush, treating as much as can be covered in say ten minutes, at a time. Wipe off all surplus before doing another section. Leave to dry for two or three days.

(2) Cut down lightly and evenly with No. 1 wet-or-dry paper in water and rinse off. Leave for an hour or two to make sure there is no dampness left in the cracks.

(3) Mix up some stiff stopping with white undercoating or gloss paint and whiting; stain it to match the colour of the oak with ochre and/or umber. Thrust deeply into the cracks and leave flush. Leave a day or so to harden.

(4) Apply a bare coat of neat Medium.

(5) The next day cut down as explained under (2).

(6) Apply a flowing—but not too full—coat of Medium.

Additional coats may be applied if desired. If you want to darken or enrich the tone, add a little burnt umber in oil to the priming coat. A weekly rub with furniture cream will clean off any corosion and make for durability. (54)

GUMMED SAW TEETH *A.R.P. (Cirencester) has an 18 in. portable saw and is troubled by the saw teeth becoming gummed rapidly. It runs at 1,500 r.p.m.*

Reply.—The trouble you complain of, gumming up, is common with several timbers. Unfortunately you have not stated the type of stock you are working on; hard or softwood, wet or dry. These details all have a bearing on the type of tooth and gullet in saw to be used.

In the first place the gummed up saw must be scraped clean and a little lubrication on the saw will at times help matters. Your saw is running slightly under speed and if you are cutting hardwood, the lead of tooth can be reduced a little with advantage. If on softwood the lead is about correct, but in any case cut the gullet base lower and ease out the tooth back to increase gullet capacity.

We presume you are using ordinary set, not swage set. You do not state the gauge of saw, but if it is heavier than is needed it must be borne in mind that an increased amount of sawdust is made and which has to be accommodated in the gullet. This could easily be the cause of the trouble. If you do not crowd the feed speed and look over the points mentioned, we think you will find an improvement in the cutting. About 8,000 lineal feet per minute is correct speed. (62)

REMOVING SMELL OF PAINT *A.C. (Preston): "I made a kitchenette several weeks ago and finished the inside with gloss paint. The smell of paint is still present. Can it be cured?"*

Reply.—There is little doubt that the trouble is due to the job being insufficiently ventilated during the drying process. Modern paints smell more than ever and persist longer, but the odour should go off as soon as the paint is thoroughly hard. In the absence of any knowledge as to the kind of paint we can only suggest that the surfaces are sponged down with cold water (some use vinegar water), pans of water left on the shelves, and the doors of the cabinet left open. (52)

REPLIES TO READERS' QUERIES

RENOVATING CELLULOSE POLISH *G.P. (S.E.1.) wishes to remove marks on cellulosed furniture. The finish has been rubbed off in patches about 2 in. square.*

Reply.—Stripping and respraying is the ideal method, but a good job can be made of patching. Try the following technique on a not so obvious surface first. You should then be able to tackle the others simultaneously. We assume that the wood is undamaged.

Preparation. Set the surface in hand horizontal. Sand the patch and for about 2 in. around with No. 0. Work along the grain only. Feather the broken edge of the existing film—that is cut it gradually from nothing out towards full thickness near the perimeter.

Colouring. We should use dry earth colours but a wide selection is required for exact matching. To save expense use an ordinary box of water colours. Work in daylight. Mix up colour to the shade and density which will match the job. Paint in carefully. For example sepia plus a touch of ochre would suit dark oak; ochre plus brown would suit light oak. It is not difficult to get a perfect match. Damp the area slightly if the paint will not take. Judge the colour when wet. It will dry flat and apparently darker. Allow one day.

Sealing. Brush on quickly one coat of french polish. Allow two hours.

Bodying. Get some brushing cellulose. Lay *one* even film from a full soft brush. Repeat at hourly intervals until the build seems right. Allow one day.

Finishing. Flat the area carefully with fine paper. Fad the area with a french polish rubber straight from its storage jar. Use straight strokes along the grain, merging into the undamaged area. Careful working should give a good result. (41)

CIGARETTE BURNS *P.D.T. (Pulborough) wishes to take out mark caused by a burning cigarette. It has not gone through to the wood, but is enough to form a hollow in the grain.*

Reply.—A cigarette burning out usually cuts through the finish and carbonises the wood surface without grooving it appreciably. It is easy to replace the polish. The real problem is to conceal or remove the black mark.

1. Use a small block and medium paper to cut the area to the white. Work only along the grain. Extend for an inch or so on every side. This may cut the black mark away without causing other than a slight hollow. Usually, however, some trace of the burned strip has to be left.

2. It is necessary now to colour this bared area. A good colour match is essential. Use an ordinary water colour paint box and pencil brush. This gives the wide range of colours needed for accurate matching. Mix the colours required dense enough to match the rest of the top but over the black area they must be just dense enough to conceal completely. If the table is figured and natural it will be necessary to blank out the black area only with the general background colour and, when dry, paint in any grain of a different colour passing through it. It needs care to get a good match. Judge the colour when wet. It will dry flat but the finish will bring it back. Your likeliest error is to make the colour too dark.

3. When dry brush on one coat of french polish. Thereafter it is just a question of building up the film working inside the papered area and finally merging into the rest of the finish. (44)

RECESSES IN TIMBER *D.N.D. (Long Sutton) has to work a large number of shallow curved depressions in wood blocks, mostly softwood. He inquires whether there is a tool available. He has a high-speed bench drill.*

Reply.—Assuming your bench drill is of sufficient strength and has from 2,500 to 3,000 revs. per minute also a chuck capable of accepting a ½ in. shank; a recessing cutter and holder can be obtained from Messrs. Wadkin of Leicester, or Messrs. Sagar of Halifax, made to your section. The cutter must be fed steadily into the work, otherwise it will be very prone to shank, a recessing cutter and holder type of cutting must be well guarded, with the timber being worked on well clamped down to the machine bed with everything quite solid and firm. The only other method known to the writer is a special jig on a spindle moulder where the cutters are set up to section and with a 4 in. swing, the material being dropped on. (60)

LACQUERED FINISH FOR WINE CABINET *F.F.M. (S.W.12.): "I have tried burnishing a clear varnish surface with Brasso, but with poor result. I have to finish a mahogany wine cabinet. Although I can french it, I prefer to give a finish which will resist the action of drinks spilt upon it."*

Reply.—Some clear varnishes, while giving a hard brilliant finish, do not respond to burnishing so well as others. They do, however, produce an attractive velvety sheen when cut down with fine abrasive paper and rubbed with a suitable liquid polish. To obtain a brilliant gloss by the brush-applied method reasonably comparable with a french-polished job, you should use a lacquer which the makers state can be burnished. They are sometimes known as "Rubbing" varnishes. This can be applied coat on coat, cuts down easily, and can be burnished to a high degree. Although the writer is by way of being an expert polisher he prefers to use this scheme for furniture.

The preliminary "oiling in" can be done with a rag with the lacquer diluted with white spirit or linseed oil; the following coats of lacquer itself are applied with a brush, cut down between coats with fine abrasive paper in water; the final coat is cut down and burnished with a suitable polish, such as that supplied by Vulcan Products Ltd.

Certainly, lacquer applied with a brush would be better and quicker for your immediate purpose; it would stand up to liquor rings better than french polish; if you have spraying facilities better still. There would be no look of varnish about it if you prepare the work properly, apply the lacquer in thin coats, and cut down to a dull surface each time; the final coat should be cut down with the finest grade of paper. For burnishing the writer has used a liquid car polish.

Regarding the question of "to strip or not to strip," in the circumstances we feel it would be better to do so, especially in view of the fact that you propose to make some additions. The stripping should be done with a non-caustic paint remover, care being taken to avoid scoring the mouldings etc. with the tools used for scraping. Shaped pieces of soft wood could well be used for quirks or crevices. Apply several coats of remover as necessary and make sure you remove every vestige of solvent at the finish by washing well with white spirit; for the mouldings a stiff brush could be used. It may be necessary to touch-up or stain certain parts to bring them in line with the remainder but as this would depend on the results of the stripping operation it had better form the subject of another inquiry. (728)

SEASONING A HOLLY LOG *J.U. (Hillingdon): "I have to cut a holly bush with 2½-in. butt. Can you tell me the best time to cut it and how to season it for use?"*

Reply.—The best time to cut down the holly bush is during early November. Holly has a bad reputation for warping and splitting, and to minimise this it is advisable to reduce the stem to the smallest possible sizes, bearing in mind the ultimate uses for which each piece of wood will be needed. The bark should be removed as soon as the stem has been cross-cut, and then both end-grains of each billet can be lightly smeared with paraffin wax or vaseline. If the billets have been sawn down into square-edged stuff, it will not do any harm to similarly treat the longitudinal surfaces, though it is emphasised that the protective coating must be light. Stack the billets in a dry shed or attic, and if space permits lay each separate billet on two or more 1 in. by ¾ in. stickers, lay similar stickers on top of the billet, and cover these with a sheet of plywood, etc., that can be used to support weights that will help to prevent distortion: odd pieces of metal, bricks, etc., can be used as weighting material.

After being left thus for a period of twelve months for every inch thickness in the billet, scrape off the wax coating and transfer the wood into a normally heated room for about three months before taking it into use. (963)

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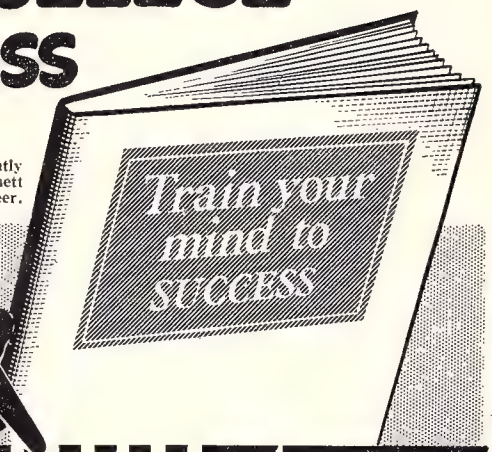

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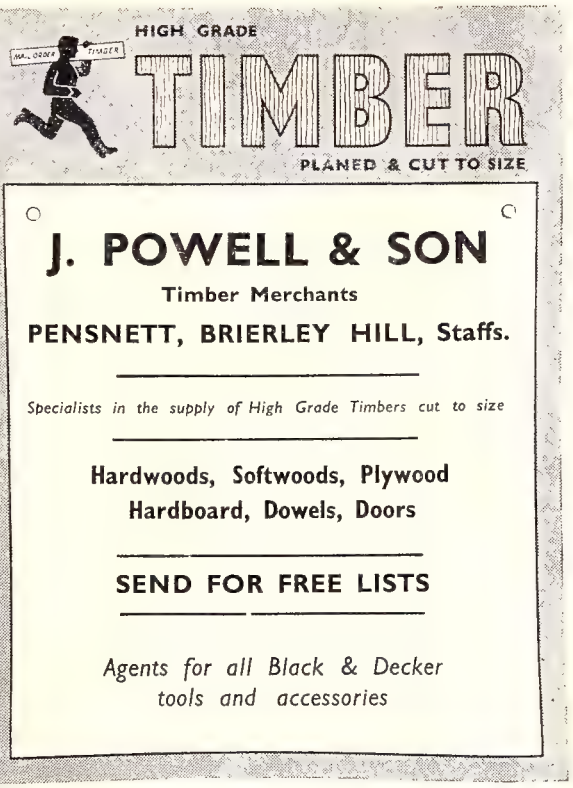
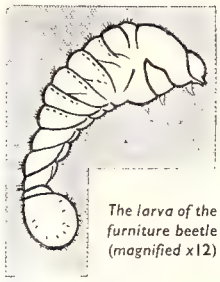


HOLES in your furniture?



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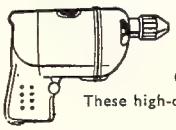

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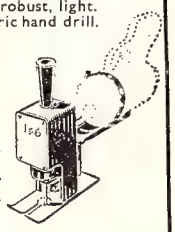

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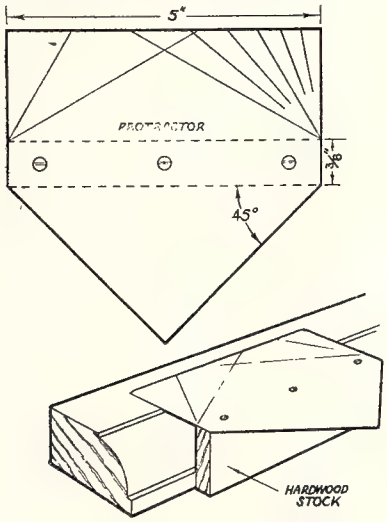
"HOW I DO IT"

Readers often tell us of methods they have found handy for doing this or that job, and when we feel such suggestions to be of interest to other readers we propose to publish them on this page. If you have an original idea connected with woodwork which you have found to simplify a job, give a better or more accurate result, or possibly speed up an operation, please send it to us with a rough sketch and brief description of what it is and how it works. We will present an honorarium of half a guinea for every idea we publish on this page. The Editor's decision as to whether a suggestion is published is final. Ideas must be the reader's own and not taken from another publication

A PROTRACTOR MITRE SQUARE

This square I have found useful for marking square, mitre, or lines at any other angle around heavy mouldings or rounded work. A piece of thin plywood or celluloid is cut to a square of about 5 in. Two parallel lines $\frac{3}{8}$ in. apart are drawn across the centre as shown. The two corners of one half are cut off at

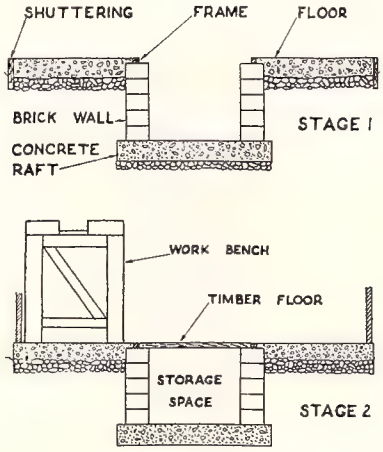


45 degrees and trimmed. A piece of hardwood 5 in. by 2 in. by $\frac{3}{8}$ in. is glued and screwed between the lines marked. It should be trued up after the glue has set. The square side is marked off as a protractor, taking the angles from the ends of the wooden stock. A rule or straight-edge should be laid on the protractor to continue odd angles across a moulding.

R. S. Perry, Montgomeryshire. (896)

WORKSHOP FLOOR

A concrete floor under a workbench is desirable for rigidity but it is cold to stand on for any length of time. A wooden block floor is expensive for a home workshop and boards are hardly rigid enough but the method described below is a practical compromise. Before the workshop floor was laid a rectangular pit was dug in the ground central with the floor area and the bottom covered with a concrete raft. A single brick wall was built enclosing the rectangular space from the raft to the approximate level of the floor. On top of the wall a rectangular wooden frame was fitted so that the inside edge of the frame was 2 in. from the inner face of the wall. The timber shuttering for the outside edge of the floor was placed in the normal way, the top of the screed being level with the top of the frame. When the concrete floor had set the shuttering was removed and cut into lengths which would fit inside the frame across the shorter span and so cover the pit. It is recommended that the frame

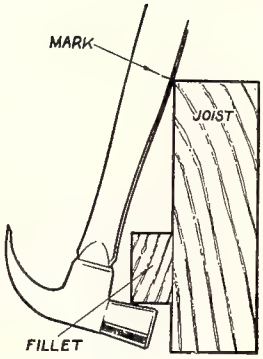


is left in position. If this is not done the concrete usually chips along the edge. The advantages of this method are that the bench is on a firm foundation, the woodworker stands on a timber floor, and there is a useful storage space beneath.

E. Anders, Lancashire. (897)

POSITIONING FLOOR FILLETS

The next time you have to nail wood fillets to joists to carry lining boards, etc. here is a speedy way to do the job. After you have nailed on your first fillet, place your hammer in the position as shown in the sketch. Mark on the hammer shaft the top edge of the joist, using either a saw-cut or Indian ink to give a clear mark. To fix any other fillets in a similar position simply move your hammer up or down until the mark on the shaft coincides with the top of

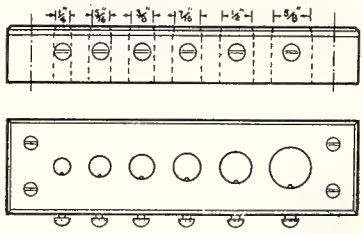


the joist and then nail. The advantage of this method is that you do not require to position each fillet individually by measurement.

W. F. Kerr, Manchester. (898)

DOWEL PLATE

It is desirable sometimes when pegging a joint, to make the peg of the same wood as the members to be joined, thereby making it less conspicuous. For this purpose, I have made a simple dowel plate from a piece of $1\frac{1}{2}$ in. by $\frac{1}{8}$ in. mild steel strip, in which I drilled the appropriate six holes, as shown in the sketch. The holes were carefully filed to a slight taper without altering their diameters, as seen from the top of the plate, thus producing a better cutting edge round the rim of the hole. The plate was screwed on to a hardwood block about $\frac{3}{4}$ in. thick, and holes drilled through the block to correspond with those in the plate, each having a diameter slightly greater than that of the plate hole (about $\frac{1}{16}$ in.). This reduces friction and lessens the force necessary to drive the wood through the hole. The insertion of a roundhead screw in the side of the block opposite each hole, so that the point just projects into the dowel hole, enables dowel pegs to be grooved as they are made. Pegs can now be made from any scrap pieces of straight-grained hardwood. The wood is trimmed to octagonal section,



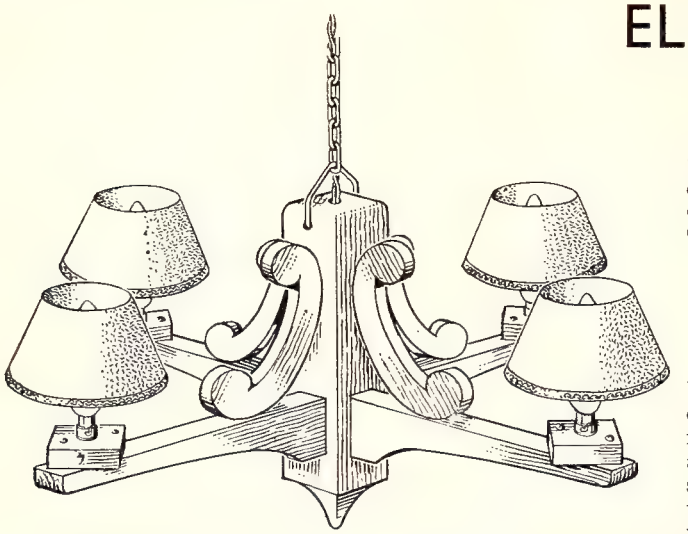
slightly greater than the diameter of dowel required. It is then sharpened at one end and knocked through the hole in the plate with a mallet, a groove being made by the point of the roundhead screw protruding into the hole.

R. L. Colbran, Lancashire. (899)

ELECTRIC PENDANT

ON CONVENTIONAL LINES

The appearance of a room is generally enhanced by a wooden electric light pendant, providing that the design is pleasing and the wood matches that of the furniture. In the design of pendant given, no difficult work is involved and, with care, a satisfactory result should be obtained



ATTRACTIVE ITEM FOR THE LIVING ROOM

Many readers have asked for a design for a pendant suitable for a room furnished with furniture of the oak period

THE work is made easier if the arms are prepared in one long length and cross-cut to form the individual arms. Accordingly, a 3 ft. length of stuff is trued up to 2 in. by $\frac{13}{16}$ in., and a gauge line marked on the two opposite faces $\frac{3}{8}$ in. from one edge. The length is then ripped down along this line in order to form a strip as shown in Fig. 6. True up the sawn surfaces and plough a central groove as indicated. As the flexible wire will have to be threaded through this groove, it should be smoothed with glasspaper.

Next square lines around the ploughed piece at distances of $8\frac{5}{8}$ in. and glue in the blocks (A). When the glue has set take a thin shaving off the edge. By gluing on the strip to the ploughed edge, a wiring hole will be formed and, since the strip has been cut from the length, the grain of both pieces will match up and, with care, a practically invisible joint should result. Before gluing on the strip it is advisable to drill the holes for the wire and also for the dowels for fixing the scroll (B) since, by so doing, clean holes can be obtained. When the glue has set, the length is planed down to $1\frac{1}{2}$ in. by $\frac{7}{8}$ in. and cross-cut to form the separate arms. The curves can be cut with a bow-saw and finished with a spokeshave.

Centre Piece.—A piece of stuff for the centre piece (C) is next trued up to size and is gauged for the mortises which receive the tenons on the arms, the gauge being again set to mark the tenons. The mortises pass through the piece and the tenons should be cut so as to be hand-tight in their respective mortises. It is suggested that a $\frac{5}{16}$ in. twist bit be used for drilling the axial hole for the flex. This operation should not be too difficult, since the depth of the hole will only have to be 6 in. in order to break into the mortises.

Lamp-holders.—In order that the holders should be as inconspicuous as possible, only the metal sleeves and ceramic inserts are used (Fig. 4), the two parts of each holder being clamped down by a block screwed to the arm. It is suggested that the miniature type of holder be used, since the standard holders will necessitate larger holes which will be partly seen from below. The blocks can be prepared in one long length and cross-cut. The thickness should be left a little full so as to allow for cleaning off after the holes are bored. It is important that the sleeves should be a tight fit in their respective holes so that there is no tendency for the holders to turn when the lamps are inserted. It will help in this respect if the inserts are allowed to project slightly, say $\frac{1}{64}$ in., so that they are clamped when the blocks are screwed down.

Ornamental Scrolls.—The setting out of the scrolls is shown in Fig. 5. If the worker has a machine jigsaw, the pieces for the scrolls can be glued together with paper in between and the four scrolls cut in one operation and afterwards separated. If they have to be made individually, they can be cut out with a bow-saw and trimmed by vertical paring, and finished with glasspaper. Care will have to be taken in positioning the two $\frac{1}{4}$ in. dowels securing each scroll.

Wiring the Pendant.—This should be done before the parts of the pendant are assembled. Since it is undesirable to have any joints in the wiring, it is suggested that the flexible wire be looped into the lamp-holders. It will be found that plastic-covered wire of the type in which the conductors run side by side will be the best because this kind of flexible wire takes up less space than the ordinary twisted flex. In estimating the length of flex required, allow two yards for looping in.

Commence the wiring by threading the wire through the centre piece (C) and out through one of the mortises until about 2 yards project from the mortise. Now make a loop about 10 in. long close to the mortise and push this loop through one of the arms to the wiring hole at its end, where the end of the loop will have to be caught up with a piece of stiff wire to draw it through the hole. About $1\frac{1}{2}$ in. of flex should project from the arm for connection to its holder.

The free end of the flex is now passed back through the same mortise and is drawn out through an adjacent mortise. Another 10 in. loop is now made close to this mortise and this loop is pushed through the next arm and out through the wiring hole, the operation being repeated for the third arm. Finally the fourth arm is wired by merely pushing through the free end of the flex. This method of wiring will be made clear by reference to the diagram shown in Fig. 8.

The length of flex which is connected to the ceiling rose is indicated at (D). When the wiring has been completed, any slackness close to the centre piece can be taken up by pulling the length (D). The arms can now be glued in place together with the scrolls. It will, of course, be necessary to cut the loops before connecting

(*Continued on page* 7)

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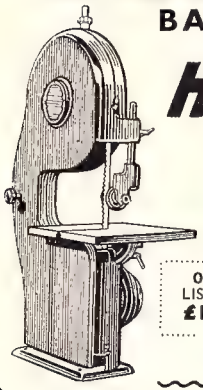

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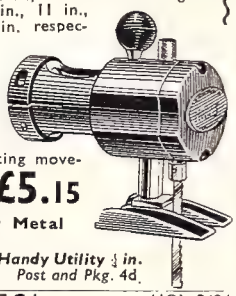

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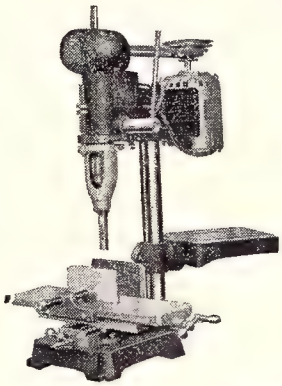

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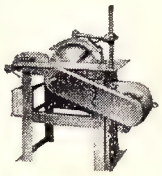

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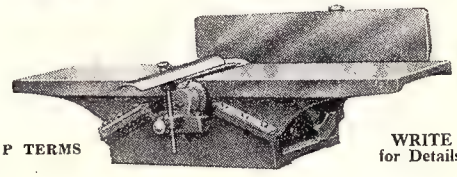

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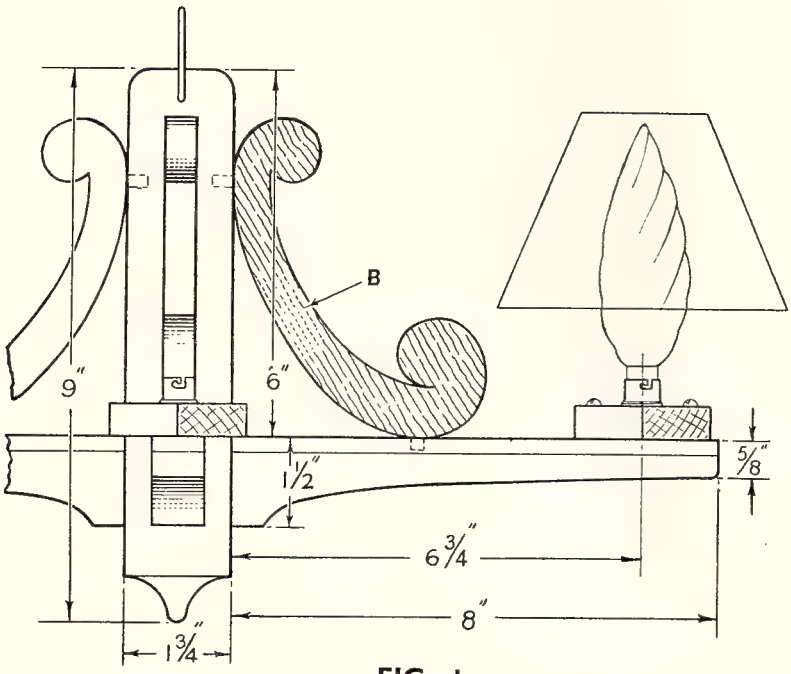

FIG. 1

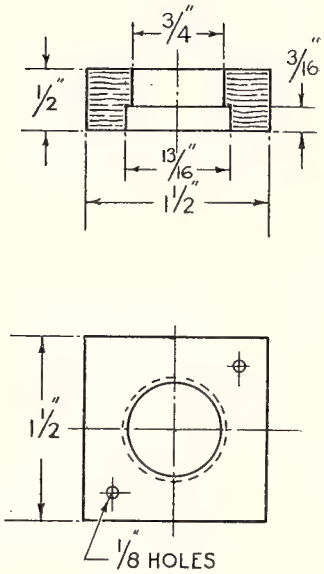

FIG. 2

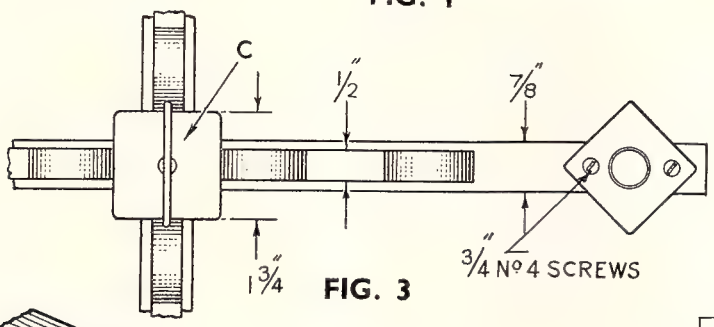

FIG. 3

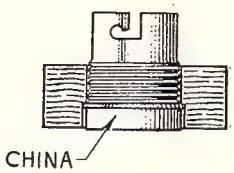

FIG. 4

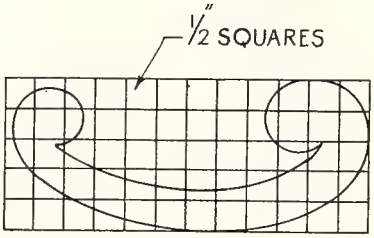

FIG. 5

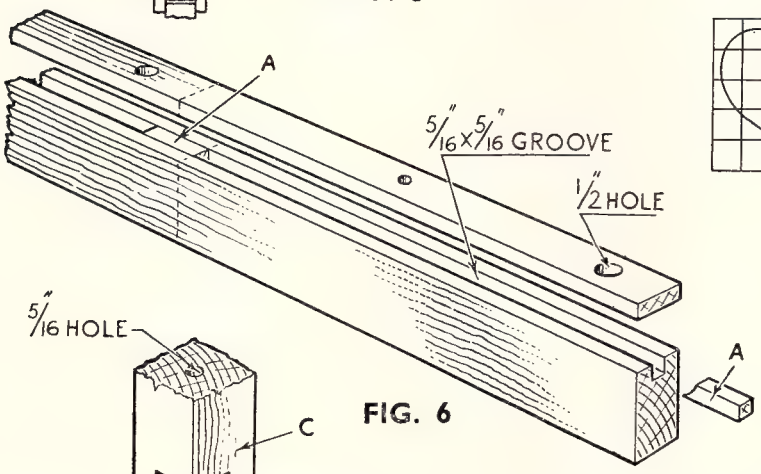

FIG. 6

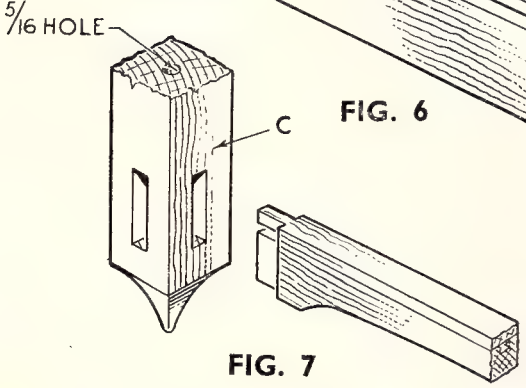

FIG. 7

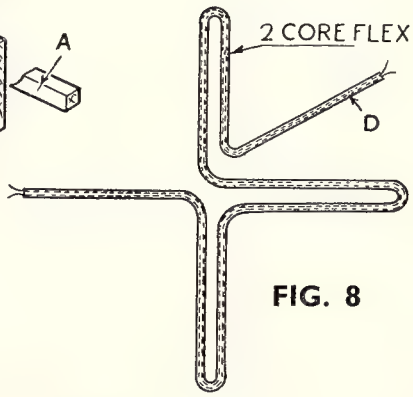

FIG. 8

ELEVATION AND PLAN WITH SIZES, CONSTRUCTION, AND WIRING DETAILS

FIG. 1. AS A WORK TABLE

Note the roomy interior and the large flap on which the work in progress can be placed

ATTRACTIVE

LADY'S WORK AND COFFEE TABLE

Built on contemporary lines, this delightful piece of furniture will fit in with most styles. Serving a dual role, it would be a useful item to have in a small flat or where space has to be taken into consideration. The average woodworker will find it comparatively easy to make and, with a few minor alterations, it could be adapted for a school handicraft centre

IN Fig. 1 the job is shown built from two contrasting woods, oak for the body and mansonia (apart from the dowel rod) for the remainder. This of course is a matter of choice or what is obtainable.

Carcase.—This is constructed from $\frac{3}{8}$ in. timber dovetailed at the corners and having a central partition. Prepare the sides and ends to cover the over-all lengths and widths and mark the angle of slope at each end of the side pieces. This can be taken from the measurements given in Fig. 2; alternatively an angle of 10 degrees is struck off. The

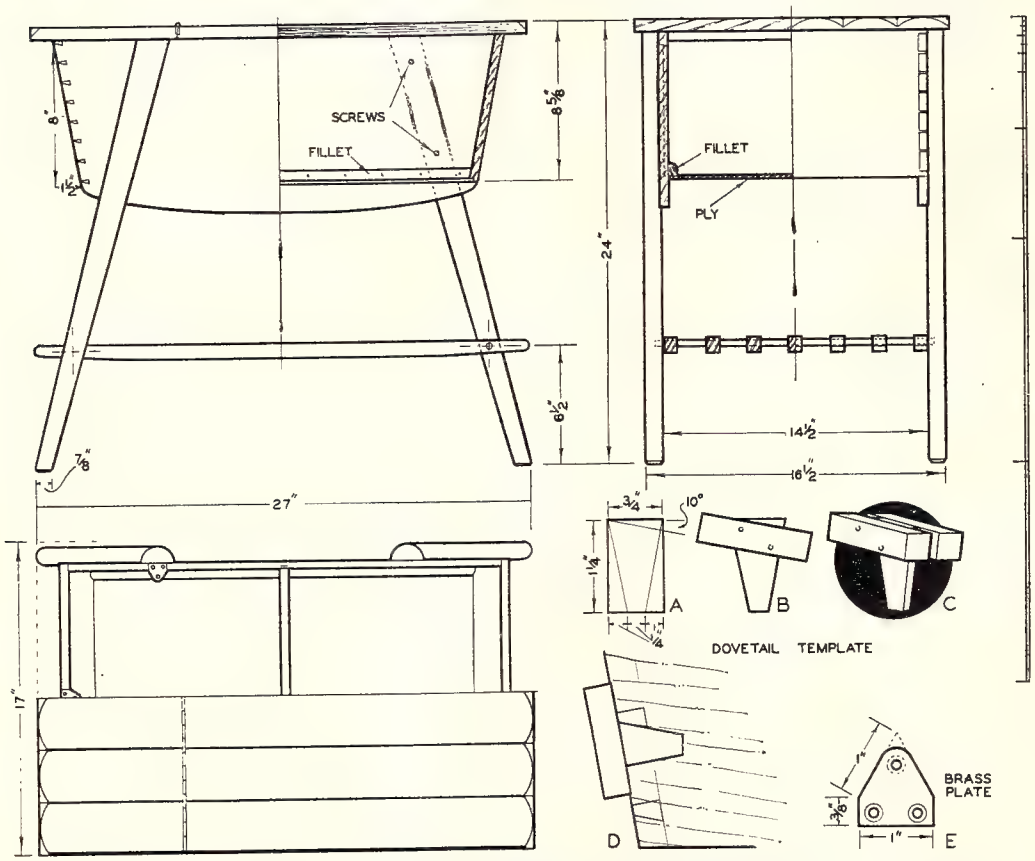

FIG. 2. ELEVATIONS AND PLAN WITH MAIN SIZES, AND TEMPLATE FOR MARKING DOVETAILS

If countersunk screws are used to fix the top to the carcase, remember to countersink the hole in the brass plate on the opposite face to those required for fixing to the carcase

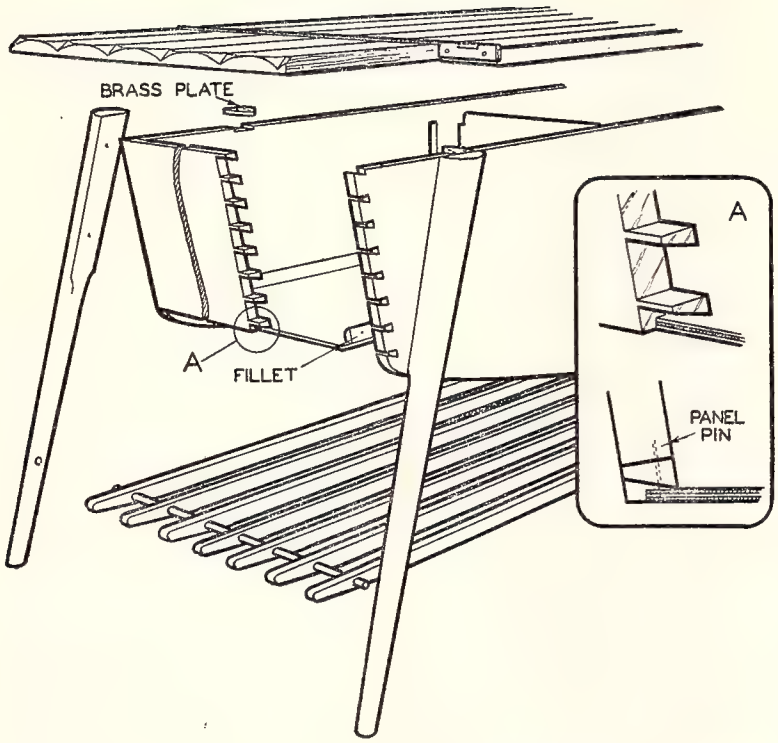

FIG. 3. DETAIL OF CONSTRUCTION WITH ENLARGED VIEW OF BOTTOM PIN

curved lower edge is best set out freehand on a piece of stiff card, cut out, and used as a template, thereby ensuring uniformity.

Set out and cut the stopped housing for the partition; also the curve and sloping ends.

Sloping dovetails are no more difficult to set out than normal but are best marked out with the aid of a special dovetail template. This is made from a piece of stiff card and two short pieces of square stuff. Set out and cut the slope for the dovetail on the card as in Fig. 2 (A) and draw a pencil line from one corner to produce an angle of about 10 degrees. Pin to the template the two pieces of square stuff level with the pencil line and trim off the projection (C). Using this template as at (D) the dovetails can be set out accurately.

Note that the bottom space for the pin, Fig. 3 (A), is *not* level with the bottom edge of the end piece but arranged to come slightly higher to allow for the rebate. Cut the tails and, using these as a template, mark out and cut the pins, also the rebates, the depth of which should be equal to the thickness of the plywood used. Offer the parts together so that the position of the fillet, Fig. 2, can be ascertained and glue and pin in place. Having prepared and shaped the central partition the carcase is glued and cramped together, checked for squareness, and allowed to set.

Legs.—These are semi-circular at the top and taper to a $\frac{7}{8}$ in. diameter circle at the foot. The change from semi-circle to the round starts at the point where the leg and carcase meet.

Each leg is first planed to a taper measuring $1\frac{3}{4}$ in. by $\frac{7}{8}$ in. at one end and $\frac{7}{8}$ in. square at the other and screwed in place on the carcase. The angle at which they are placed can be taken from the drawing by measurement or with the aid of a protractor. When in position mark the point where the carcase meets the leg, also the position of the dowel holes, for the shelf. Remove and shape, using a spokeshave and glasspaper, after which they are glued and screwed back in place.

Top.—If it is not possible to obtain a solid piece of the width shown this can be built up by rub-jointing two pieces together. Prepare to size and set out the shaped ends using a stiff card template. With pencil mark the position for all the inlaid lines except those at the edges. To prevent the saw from wandering when cutting the slot, a straight-edge is clamped alongside each line. It is possible that the saw kerf will be found to be too narrow for the line. If this is the case the slot can be suitably widened by filing a bradawl to the width required and scratching out the necessary amount.

FIG. 4. AS A COFFEE TABLE

As each groove is completed the line is glued in and eased down with the peen of a hammer, after which it is covered with a strip of gummed paper to hold it in place till set. Rebates for the edge lines are made with a cutting gauge set $\frac{1}{8}$ in. bare. The inlay is glued in place and held till set with gummed paper.

The shaped ends are formed by sawing a slot between the curves at an angle of 45 degrees, using a dovetail saw and removing the waste with a chisel. Finish with using file and glasspaper.

Clean up the top, mark across, and cut for the piano hinge. A rebate is worked on each piece to take half the hinge. It is held in place with $\frac{3}{4}$ in. brass screws.

Three small brass plates shaped as in Fig. 2 (E) are made to hold the top to the carcase. Two of these are let in and screwed to the top edge as in Figs. 2 and 3. The third is placed centrally at one end. As an extra precaution against the possibility of top splitting due to shrinkage, the fixing hole in each of the side brackets can be elongated. The top is fixed by screwing up through the bottom of the carcase after which the bottom is glued and pinned in place.

Shelf.—This is made in one of two ways, either as individual slats or worked as a single piece which is afterwards cut into sections and cleaned up. Whichever method is adopted it is essential that the distance between the holes in the slats is the same as the distance between the holes in the legs. Having bored the holes the slats are equally spaced on two lengths of dowel rod and held in place by driving a panel pin through the underside into them. When prepared the dowel rod tips are glued and the frame eased in position and allowed to set.

Finish.—As a protection against dust and dirt two or three coats of french polish are recommended, rubbing down between each with fine glasspaper.

CUTTING LIST

	Long ft.	Long in.	Wide in.	Thick in.
4 Legs	2	2	2	$\frac{7}{8}$
Carcase				
2 Sides	2	1	10	$\frac{3}{8}$
2 Ends	1	3	$8\frac{3}{4}$	$\frac{3}{8}$
1 Partition	1	$2\frac{1}{2}$	$7\frac{1}{2}$	$\frac{3}{8}$
1 Top	2	$3\frac{1}{2}$	$17\frac{1}{2}$	$\frac{5}{8}$
1 Bottom	1	10	$14\frac{1}{2}$	3-ply
2 Fillets	2	0	$\frac{3}{4}$	$\frac{3}{8}$
Shelf				
7 Pieces	2	$3\frac{1}{2}$	$1\frac{1}{4}$	$\frac{3}{4}$
2 Dowel-rods	1	4	—	$\frac{3}{8}$
Line				
2 Pieces	2	3	—	$\frac{1}{8}$ sq.
5 Pieces	2	3	—	$\frac{1}{16}$ sq.

Allowance has been made in lengths and widths. Thicknesses are net. Extra fittings, include: 17 in. piano hinge, brass plates and screws. (101)

NEW BOOKS

Modern Furniture and Fittings, by John and Rodney Hooper. A second and revised edition of this valuable book has just been published. It first appeared in 1948, a period when all industry was still in the grips of "austerity." To-day the position has changed, and the present book includes some altogether remarkable examples of fine woodwork. Perhaps Mr. John Hooper's best-known book is **Modern Cabinet Work,** of which a completely new and revised edition appeared in 1951. The present work is largely designed to be supplementary to this book, and it covers an extraordinarily wide range of techniques and subjects. All the usual types of furniture are given—bedroom, dining-room, hall, lounge, and so on; and in addition are useful chapters on church furniture, exhibition and museum show-cases and fitments, shop fittings, and libraries. We have never before come across a book containing so wide a range of designs and techniques.

Present-day developments in machines and materials have largely revolutionised the furniture industry. Methods and processes which are now everyday practice would have been impossible or at least very difficult even a relatively few years ago. This is particularly true in shaped work and in the use of wide unbroken surfaces. A special feature of the book is the illustration work. This consists largely of page plates of detailed drawings, plus 21 double-page drawings in the form of folders. In addition are 70 photographic plates showing examples of work.

The book measures 10 in. by 7 in. and contains 328 pages plus the photographs and folding plates. The author, Rodney Hooper, who signs the preface to this second edition, is to be congratulated on the work. It will be of value to everyone connected with furniture and interior fitments; designers, draughtsmen, cabinet-makers, architects, teachers, and students. Published by Messrs. B. T. Batsford Ltd., of 4 Fitzhardinge Street, London, W.1. Price 50s. net.

Wooden Toys for Boys, by P. E. Norman. This is a useful book for the reader interested in toy-making. It includes chapters on tools, materials, marking out and cutting, etc., making wheels, and follows with a range of things to make—chariot, gun, tug, car, launch, windmill, and so on. The closing chapter deals with finishing. The work is well illustrated with photographs and line drawings and contains many useful hints and ideas. Size $6\frac{1}{2}$ in. by $5\frac{1}{4}$ in., with 64 pages. Published by the Studio Ltd., 66 Chandos Place, W.C.2. Price 5s. net.

Readers who seek a really comprehensive book on woodwork should see the **Complete Book of Woodwork,** by Charles H. Hayward, published by Evans Bros. Ltd. It includes chapters on all branches of woodwork; tools and their use, light machines, construction, joints, metal fittings, veneering, wood carving, turning, timbers, and wood finishing. In addition is a wide range of designs to make—small things, furniture, and garden woodwork. It contains 344 pages and is well illustrated with photographs and line drawings. Well bound with stiff covers with black cloth binding and gilt lettering, it is published by Evans Bros. Ltd., Montague House, Russell Square, London, W.C.1. Price 15s. net.

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SMALL SIDEBOARD

WITH MAXIMUM ACCOMMODATION

This sideboard has been schemed for a small living room or kitchen in which the utmost use of limited space is essential. It might be carried out in a good class hardwood if the natural texture of the wood is to be retained, or in a minor hardwood if painted

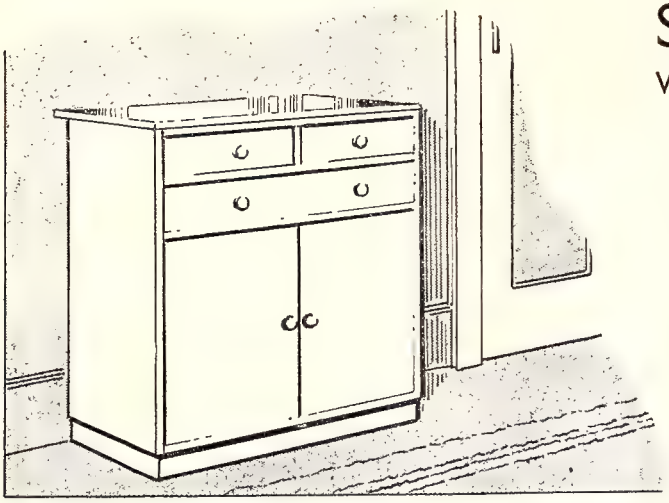

FIG. 1. SMALL SIDEBOARD FOR LIVING ROOM OR KITCHENETTE
Width 2 ft. 8 in., height 3 ft

CUTTING LIST

	Long ft.	Long in.	W'de in.	Thick in.
Carcase				
(A) 2 Sides	2	10	17½	⅞
(B) 3 Top rails	2	8	3¼	⅞
(C) 3 Bottom rails	2	8	3¼	⅞
(D) 2 Drawer rails	2	8	2¾	⅞
(E) Front muntin		6½	2¼	⅞
(E) 1 Rear hanger		6½	2½	½
(F) Bottom	2	7	16½	⅝
(G) Back	2	10	32	ply
(H) Top	2	9	19	¾
(J) Shelf	2	7	16	¾
(K) Plinth	8	6	2½	⅞
4 Runners	1	3	1¼	⅞
1 Runner	1	3	3¼	⅞
1 Guide	1	2½	1	⅞
2 Fillets	1	3½	1	¾
Drawers, Doors				
2 Fronts	1	3	4¼	⅞
1 Front	2	7	4¾	⅞
4 Sides	1	4	4¼	½
2 Sides	1	4	4¾	½
2 Backs	1	3	3½	⅜
1 Back	2	7	3½	⅜
2 Bottoms	1	3	16	4 mm.
1 Bottom	2	6½	16	4 mm.
2 Doors	1	9½	15	⅞

Allowance has been made in lengths and widths, thicknesses are net. (928)

No difficulty should be experienced by the average woodworker in making the job as no involved method of jointing has been used.

Main Carcase.—The sides (A) are rebated for the back (G) and held in place by rails (B) and (C) lap-dovetailed into the top and bottom, Fig. 2. To form a rebate at top and bottom for the back (G), the rear rails are set in from the edge by a distance equal to the thickness of the back used, i.e. the depth of the rebate. The drawer rails (D) are stub-tenoned into the sides and to these are attached the runners. The drawer muntin (E) is through-tenoned and wedged into the top front and middle rails. From the centre of the middle rail and extending to the back of the cabinet is fitted a runner, the rear end of which is supported by an additional hanger dovetailed into its end and into the top rear rail. A fillet, equal to the thickness of the front muntin (E) is glued and pinned to the centre of this runner to act as a drawer guide. The top (H) is attached to the rails with screws which pass through the rails. Note that the top overhangs the rear by one inch to enable the top to fit flush against the wall. It is as well to measure the thickness of the skirting board and to arrange the width of the top accordingly. Plywood or hardboard back (G) is cut to fit the rebate and screwed in.

Plinth.—This is dovetailed or mitred at the corners, preferably with angle blocks glued in. It is screwed in position through the bottom rails (C).

Shelf.—In Fig. 2 this is shown resting on fillets, but it can be housed permanently into the sides.

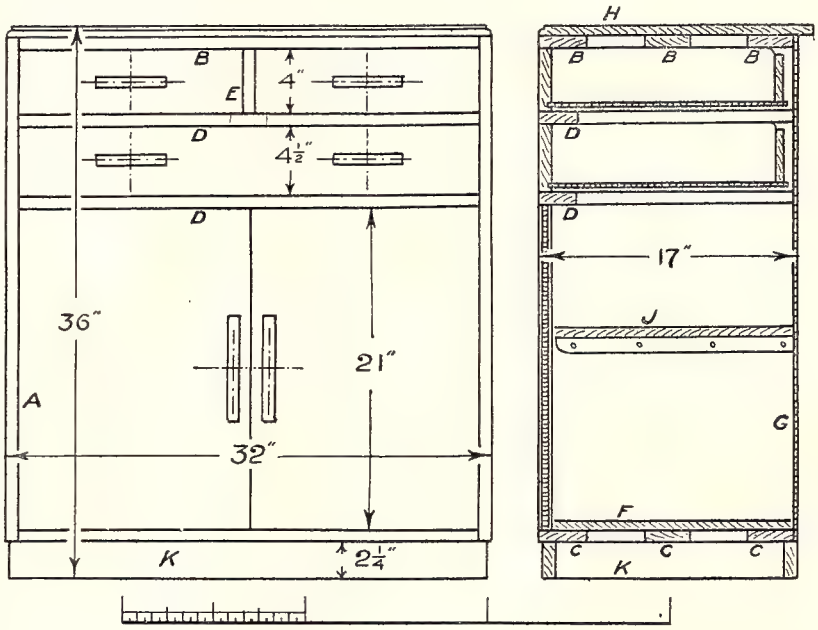

FIG. 2. ELEVATION, SCALE, AND END VIEW SECTION
The dotted lines on the front elevation give the centres of the drawers and door should knobs rather than bars be fitted

WOOD FINISHING DIFFICULTIES

TROUBLES READERS HAVE—AND THEIR CURE

Every week brings us letters from readers who cannot find a satisfactory solution to a problem in finishing their woodwork. We give here a typical selection as probably other readers may be up against the same difficulties

POLISHING A SOFTWOOD BOOKCASE

" I have made a bookcase in softwood, and would like to put a nice finish on it. Can you advise me on the filling, polishing, etc. ? "

An oak type finish would be suitable. Damp all surfaces, and when dry paper smooth, using a cork with flour grade paper. Remove all dust.

Put one ounce of lump vandyke brown into a vessel. Add half pint of warm water and stir until the brown is dissolved. Pour some *Alabastine* in another dish. Damp a rag in the brown stain then dip it into the *Alabastine*. Rub at an angle to the grain. Treat one surface, and remove as much as possible of the filler on that surface with fresh tightly rolled rags. Treat each surface the same way. The rag must not be too wet with the stain. You should have the feel of rubbing in a stiff paste. Allow one day to dry. The surfaces will then look as if they had been painted with flat milk chocolate coloured paint. Paper with a cork and No. 0 glasspaper along the grain. Remove all dust. The surfaces will be clear and stained yellowish brown with the grain filled and showing dark brown.

Now oil the surface, using raw linseed. Apply generously, rubbing in firmly and wiping off as dry as possible. Cover to keep off dust and leave for one day. Stain with *Colron* oak stain. If the timber is really poor stuff use dark oak. You could make a suitable stain by thinning black japan with substitute turps. Apply it with a rag and wipe out uniformly. Note that a water stain is unsuitable as it will not take on the oiled surfaces. The oiling assists uniform staining and helps the build up of the finish. Allow a day for the stain to dry then rub the surfaces over firmly along the grain with a rag.

Having laid a good foundation it is now easy to fad up, body up, and finish in the usual way. Transparent polish would be suitable. So also would brown polish. The latter would make the job a shade or two darker. (202)

GREY LIMED OAK

" I have some chestnut wood which I should like to use for making head boards to match a bedroom suite in grey limed oak. Can you advise me ? "

This job requires careful work. It is important to match the grey exactly and you can do this only by working in clear daylight. Prepare the stain from *Reeves Poster Colour*. They have several greys ; Oswald, Elephant, etc. Choose one as near the colour as possible. If it does not match exactly when diluted you can darken it with a very little poster dark brown, lighten it with white, or warm it with red. A small jar will make up sufficient stain. A grey stain is difficult to prepare as a rule. Do not worry if our method seems peculiar. It works perfectly, and is simple, and these are the things that matter. Poster colour is, of course, a water paint. You must dilute it with water until it is the consistency of water. When it is ready add a dash of ammonia, though this is not essential. You should try the process out on a scrap first.

1. Damp down well with warm water. When dry paper flat, using flour grade with a cork. Wip off the dust with a clean rag.

2. Apply the stain with a rag. Work only along the grain—this must be kept as open as possible.

3. When dry fad up the surfaces using white polish. The aim here is to seal in the stain, which must be protected from the rubbing involved in liming. Again you must work along the grain only as far as possible, and apply a minimum of polish with a fairly dry fad or rubber.

4. Prepare the lime from white distemper. A creamy consistency is required. Work it into the pores, rubbing at an angle to the grain. Take off the surplus on the surface with a tight rag working the same way. Change the rag frequently.

5. This in turn must be sealed off when hard without " killing " the whiteness. This can happen if you flood on the first application of polish because the distemper will absorb it and consequently lose its whiteness. You must therefore be careful with your first coating. Have the rubber fairly dry and cover the surface once only for a start. After this is hard you can work away as usual.

It is necessary to use pure white polish—for instance, Jaxa White from Messrs. Sonneborn & Rieck, Jaxa Works, South Grove, Tottenham, S.W.15. An off-white polish will darken the white filling and spoil the effect. For the same reason use new rubbers. Old ones would spoil the whiteness of the polish. You should note that it is important to get the consistency of the stain right, and you should check the shade when it is dry as it looks darker when wet. (495)

DARKENING LINSEED OIL

" Is there any colouring matter that can be added to linseed oil so that a light coloured wood is darkened by its application ? "

You can darken linseed oil by adding a little creosote ; or you can add painter's umber in oil. The latter is like brown putty and is used to alter the colour of paint. Little of either of these substances is required and you would need to experiment to get the effect you want. Creosote would be the better.

If you are thinking of an oil finish we strongly recommend that you :

(1) Stain with any suitable stain to the colour you want.
(2) When dry brush on one coat of french polish. Paper it lightly when hard.
(3) Apply your oil, rubbing it well in, and covering with a cotton or other cloth to keep off dust.
(4) Repeat (3) daily for about two weeks, when you will have an excellent dull and mark-proof gloss which will improve with time and which will be the colour you want.

The snag about using darkened oil is that you could not forecast what the final shade would be because you would, in effect, be giving repeated applications of a stain. (459)

SALE AND EXCHANGE

Readers' Wants and Offers, 3d. per word; Trade 10d. per word. Fee for Box No. 1s.

Private offers of goods for sale are quickly snapped up and readers are advised to write and ask if offers can be reserved before sending cash.

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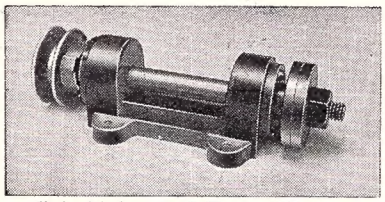

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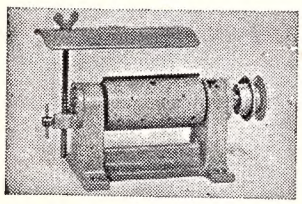

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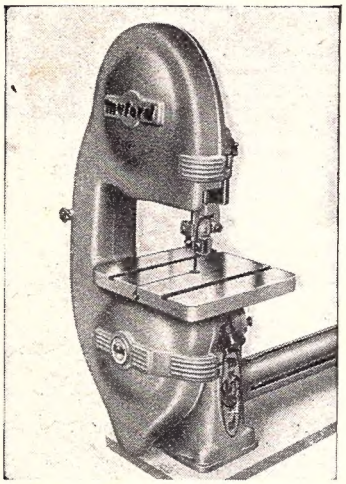

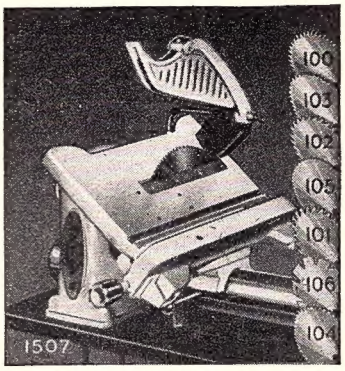

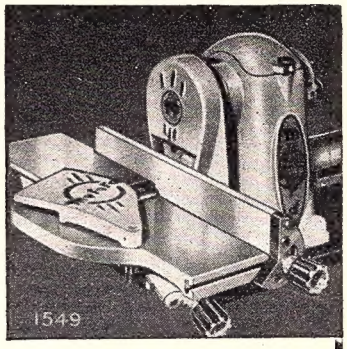

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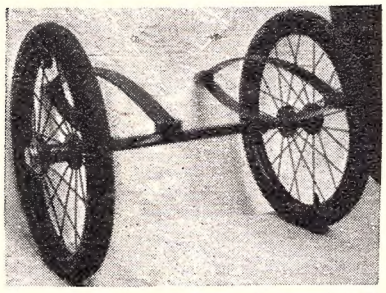
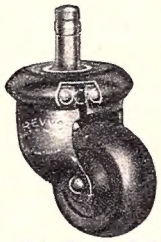
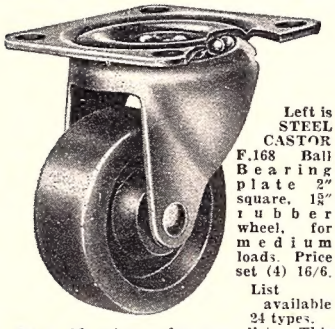


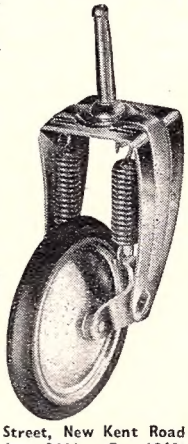
Above sets Truck and Trailer Underworks: 1R and 4R have rubber tyres 1", 1¼", with wheels 12" to 30" diam Sets "P" have pneumatic tyres 2", 3" and wheels, 14" to 25" diam. Plain or ball bearings. List available. Garden Barrow wheels 16 types. List available. Castor, right, bottom, has sprung forks, ref. FS/3 with 3" diam. wheels rubber tyred, light loads. Price set (4) 22/-



High Grade Ball Bearing Plate CASTORS. Ref. S.D. Prices sets (4) for furniture:
1⅝ in. wheel 19/3
2 in. ,, 21/6
3 in. ,, 30/3



Left is STEEL CASTOR F.168 Ball Bearing plate 2" square, 1⅝" rubber wheel, for medium loads. Price set (4) 16/6.
List available 24 types.

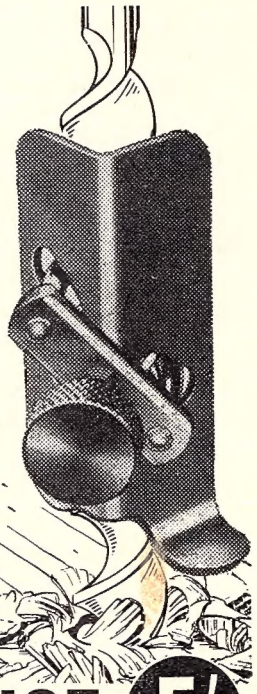


Send 6d. stamp for any list. This amount deductable from order.

THE SOUTH LONDON WHEEL WORKS LTD., Lion Street, New Kent Road Elephant & Castle, LONDON, S.E.17. Phone: Rodney 3011. (Est. 1860)

....bore to the exact depth every time

The "Eclipse" bit gauge ensures that holes are bored to the *exact* predetermined depth. A secure grip of the auger is made possible by the specially designed body of the gauge and the U-shaped clamp. There is no clogging or marking of the work and no loose parts to get lost. The bit gauge is suitable for Jennings and solid centre type bits from ⅛" to ¾".



Eclipse BIT GAUGE 5/-

MADE BY JAMES NEILL & COMPANY (SHEFFIELD) LIMITED

BC2

WOODWORKER COUPON
For use with Question Box Series
JANUARY, 1956

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